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Economic Institutions

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PART ONE

THE SETTING

CHAPTER I

THE BACKGROUND OF THE AMERICAN ECONOMIC ORDER

The Two Continents

FIVE hundred years ago no man in America had read a book. No man had written one. The subject matter of this book did not exist. Except for the higher civilizations of the Aztecs and Mayas in Mexico, the continent of North America was inhabited only by small bands of Indians. East of the great plains it was a fruitful and heavily wooded country, with many rivers, lakes and mountains. Beneath its fertile surface soil lay great deposits of minerals, coal and petroleum. More than two-thirds of the world's known supply of coal, one-half of the total iron ore and one-third of the total petroleum resources were buried there. Its rivers and lakes offered broad and deep waterways and provided sources of power. Of these vast resources the American Indian made little use.

Across the Atlantic another continent had long been the home of "civilized" peoples. For centuries communities and nations in Europe had practiced the arts of peace in relatively permanent groups. There had grown up, especially in the rural areas, a fairly rigid form of social organization which we now call the feudal system.[1] The rulers were lords who owned the land; the workers were serfs who served these lords, legally bound to the estate lands and forbidden to go elsewhere. Between these two classes were other fixed social groups. The law of succession was likewise invariable. Always the king's son became king, the lord's son, a lord, the serf's son, a serf. Custom and tradition determined all things. Even the method of planting and the kind of seed to be sown were ordained by the past. In other words, a man's opportunity, the scope of his activities, and his position in life were fixed long before he was born.

There was more freedom of action in the towns, although even there custom and tradition were exceedingly important. Each craft was governed by an association of the craftsmen called a guild, which sometimes extended its authority even to the fixing of prices. This system, with variations according to place and nationality, obtained throughout most of Europe. Its details are exceedingly interesting, but it is sufficient for our purpose here to note that it was a rigid system, in which each person's opportunities and behavior were determined by tradition and custom. In spite of the fact that the feudal system began to break down by the sixteenth century, many evidences of it survive and can still be seen in small European agricultural communities and in institutions like the English House of Lords.

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[1] For more detailed discussion of the feudal system than the following see p. 42.

The Migration

These two continents were not destined to remain always, the one fallow, the other intensively cultivated. As stories of the riches of the newly discovered continent spread through the older countries, the more enterprising and daring and the discontented left the homes of their ancestors and the certainties of the settled life for the great adventure of the new world. They came slowly at first. For a hundred years after the landing of Columbus there were practically no settlements in America, but in the seventeenth century they grew rapidly and by 1790, when the first Federal census was taken, the population of the United States totalled nearly four million persons, about the number in Switzerland to-day. Since then the population has been increased by the natural growth of these four million and by immigration from other countries. In the last hundred years there have been approximately 35,000,000 immigrants, nearly half of whom have come since 1900. Yet even at the present time there are ten individuals in the small continent of Europe for every three in North America.

The millions of immigrants who have sought a new home in America have been of very diverse types and have brought with them very diverse customs and traditions. The early new-comers were chiefly from England and France. About 1850 an influx set in from Ireland, great numbers leaving their native land because of a succession of severe potato famines. The next great wave of immigration came in the seventies and eighties, and was dominated by immigrants from Germany. Up to the end of the nineteenth century the majority of immigrants had come from northern and western Europe, but beginning about 1895 a wave set in from a different direction. The frontier and extensive public land had disappeared and the country was becoming more and more industrial. Vast numbers began arriving from Italy, Russia, Austria, and Greece. Thus one-half of the total recorded immigration into the United States, crowded in the last twenty-five years, has come from southern and eastern Europe, raising new racial, cultural and political problems. The recent law drastically restricting immigration is but one result of these new conditions.

Had the country depended upon natural increase of population alone, had there been no immigration from Europe since 1790, there would have been in the United States in 1920 just one-half the number of persons the census[1] for that year actually recorded. One can only speculate what the difference would have been in the character of the population and the development of the country, socially and culturally as well as economically. But that there would have been a vast difference hardly needs to be demonstrated.

Notwithstanding the diverse origins of its population, the United States has evolved a new and relatively unified form of society. It did not take over the social organization of any "home" country. The many customs and traditions brought over from Europe were remoulded by new conditions. Among the many influences which formed the new society two are of special significance: the presence of the frontier and the richness of the natural resources.

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[1] See discussion: Rossiter, William S., Increase of Population in the United States 1910-1920. (Census Monograph I.) Appendix A.

The Frontier

The frontier implies the existence of territory still unsettled. North America is a vast continent, two-and-one-half times as large as Europe. The earliest colonies naturally were along the Atlantic coast and the frontier was but a few miles inland. They were small and grew slowly. Settlers were delayed and discouraged by a rough ocean, which could be crossed only by spending many miserable weeks in a slow sailing vessel. The Pilgrims in the *Mayflower* were at sea more than ten weeks before they sighted Cape Cod. Even when these colonies had grown to considerable size, a wilderness was at their back, almost impenetrable by reason of the backwoods of the Appalachians and the bitterness of the Indians. Only with painful slowness were wagon roads and canals cut through the wilderness.

During the nineteenth century the extent of the settled area increased rapidly. The government offered land to the settler at a nominal price, and the pioneers pushed westward until stopped by the dry and unfamiliar climate of the western plains. The excitement over the discoveries of mineral wealth urged them on, and the first railroad across the continent was finished in 1869. By 1890 the American frontier had disappeared. No longer were there attractive stretches of undeveloped land, still unsettled.

The influence of the frontier on the development of the social organization of the United States is usually under-estimated. In the first place, the frontier offered an abundance of free land and freedom of opportunity, thus threatening the larger centers of population. It provided active competition with the city. Unless urban conditions were made attractive, the city was in danger of losing its much needed labor supply. In the second place, the class distinctions of crowded Europe, with its fixed civilization, could not be maintained under frontier conditions. There were no mossy traditions determining social classes in the new land. All men were equal in the wilderness; no man could dictate. They were handicapped only by innate abilities, and he dominated who had the stronger character or heavier fists. Consequently the frontier was a great force for democracy. In the third place, it brought out certain qualities in the men who faced its hardships. It made them active, resourceful and independent. This may account in part for the fact that most of the progressive steps in our government have come out of the West. Finally, the frontier continually offered a challenge. Frontier life is rigorous and uncomfortable. Its rewards are small. But it is in the face of difficulty that men often accomplish most.

Natural Resources

The second outstanding formative influence in American society was the richness of natural resources. Had North America been a barren, sterile desert, its economic development obviously would have been very slow. But land was fertile, and wealth came to many who were fortunate in their ownership. In Europe the valuable land was already controlled by owners who would sell only at high prices, in America it could be bought for a song and there was plenty of it. Beneath the soil were large stores of gold, silver, copper, iron, coal and petroleum. Men saw great fortunes made from land ownership quite by chance. Such conditions tended to create a hopeful, optimistic and energetic economic life.

The same situation led to rapid development and exploitation. Coal underground has little value when compared with coal actually ready for the market. Petroleum must be extracted without delay or it may seep away to other levels. Gold must be carefully recovered or it may be stolen. The presence of abundant resources and the desire of their owners to profit by them at once led to increased economic activity, which in turn stimulated the arts and crafts dependent upon natural resources for their raw material. The known natural resources are enormous, and individuals have been permitted to use them as they desire. This is one reason why North America has grown rapidly whereas South Africa, discovered by Diaz four years before Columbus discovered America, is still, in the main, undeveloped territory. Since the discovery of gold and diamonds in South Africa fifty years ago it, too, has developed rapidly.

What Is Economics?

America, then, has developed a way of living which is quite different from that of the early Indians on this continent or the Europeans in the feudal era. It has taken the land from the Indians and the people from Europe and in three hundred years has created its present economic system. It did not create the first economic system. The Indians had economic institutions. There may be little, if anything, in common between the way of living of the early American Indian in his tent and the way of living of a modern American family in a city apartment, but the fundamental problem of economics confronted the Indian brave no less than the factory worker of today.

What is this problem? Every person has certain wants which must be satisfied in order to maintain life—food, clothing and housing. In addition he has wants not so essential—his comforts and luxuries. Economics is the study of the process whereby society attempts to satisfy the wants of its members. From the point of view of the individual it is the study of why and how he gets as much as he does and why some other person gets more. The economic problems of the Indians were simpler than ours today because their wants were simpler, but they were just as immediate and pressing.

It would be foolish to attempt to draw a circle around certain subjects and mark that off as exclusively the field of economics. Foreign trade, for instance, is primarily an economic problem, but it also offers subject matter for history, geography, political science, psychology and ethics. Economics deals with much the same material as other social sciences, but it is essentially concerned with those aspects which affect the way in which we make our living or the kind of living that we make. And since we are all engaged, if not in making, at least, in receiving a living, we are continually faced by economic problems.

What Is an Institution?

Although every nation in every age has had the same basic economic problems to cope with, the methods of achieving the satisfaction of wants have differed widely. For the Indian the methods were simple—food by hunting or raising corn, shelter anywhere he pitched his tent, clothing from skins, and few comforts or luxuries. In contrast our modern economic system is an amazing phenomenon. Enormous quantities of goods of endless variety are made, distributed, and consumed each day by millions of persons. Yet no group of men ever drew up regulations for economic procedure as fifty-three men drew up the Constitution of the United States. No specifically designated group of men is charged with operating the system. There is no dictator to tell people what to make or buy, as a general commands his men. There is no mighty hand to deal out articles as the father dishes out vegetables at the dinner table. Without direction, why is there not chaos?

The answer is that though written laws and official direction may be lacking, there is an elaborate economic system, operating with surprising regularity and uniformity. It has been developed without conscious planning. We all enter into it and accept it just as a baseball player accepts the rules of the game. It is the rare ball player who wonders why three strikes should constitute a strike-out instead of four, and rarer still the one who refuses to play because he believes four would improve the game. In the same way we seldom stop to inquire what the basis for our economic system is and why. We grow up with it and accept it, sometimes with qualms and sometimes with conscious protest but even so without refusing to play. The fundamental rules or principles which determine the nature of our economic system are not published regulations like those of baseball, but have an even more secure basis. They are institutions.

An institution is a *social* habit of thought or action. Just as an individual forms habits by which he acts in certain ways without going through a long reasoning process, so society, individuals in the mass, may form habits. Things are done by us collectively in a certain way. It may be in our conduct, as courtesy to women, or in our thinking, as our belief in limiting the number of a man's wives to one. In either case, we seldom reason about the matter but accept it, not so much because we personally have proved it best by our own analysis, but because it is generally accepted and followed.

Although the Indian, the feudal lord, the handicraftsman, and the modern business man all faced economic problems, the economic institutions whereby each sought to solve his problems are very different. Our present economic system may be described as having four institutions as its foundation:

1 Machine Technique
2 The Price System
3 Private Property
4 Business Enterprise.

These were not the basic institutions of either the Indian or the feudal lord. They may not be institutions of the American economic order one hundred years from now.

Changing Institutions

Institutions themselves are not rigid, but they are stubborn, as all habits are. They may be changed, but bringing about such changes is not an easy matter. The Russian revolution found certain social habits extremely difficult to break. Economic institutions are at all times subject to pressure in one form or another, seldom strong enough to destroy the institution and seldom designed to do so, but often of sufficient weight to change or modify its form. The regulation of railroads in the United States may be taken for example. The development of great injustices and inefficiency on the part of the railroads resulted, in 1887, in a definite restriction and revision of the private property rights of railroad owners through the establishment of the Interstate Commerce Commission.

Among the factors which are continually reshaping our economic system are the increase or decrease in the population, changes in people's wants, the discovery of new natural resources or the exhaustion of old resources, new scientific discoveries, political or social reforms, and the failure of some part of our economic system to function properly. Small changes such as the reorganization of the banking system or the establishment of unemployment insurance are constantly occurring. Great changes generally come about gradually, usually in the form of a succession of lesser changes. However, important changes are sometimes brought about by violence, as, for instance, the destruction of slavery in the United States, or the redistribution of land in Mexico.

It is the purpose of this book to examine the economic order now existing in the United States. We must see each of the four institutions at work. We must examine the facts and consider alternatives. Only then can we understand and attempt to pass judgment on our current economic system.

For varied opinions and viewpoints on immigration, see the *Readings* collected by Edith Abbott. For an excellent example of the use of statistical technique in analyzing such a problem, see Harry Jerome's *Migration and Business Cycles*. For the frontier, Frederick J. Turner's *The Frontier in American History* draws the broad outlines, later filled in by more elaborate and detailed studies such as Frederic L. Paxson's *History of the American Frontier, 1763-1893*. An excellent description of frontier conditions appears in *A Son of the Middle Border,* by Hamlin Garland. For vivid discussion of the nature of institutions, by eminent sociologists, we have Charles H. Cooley's *Social Organization* and William F. Ogburn's *Social Change*. Finally, one should examine an odd collection of essays by the "younger economists" edited by Rexford Tugwell and called *The Trend of Economics*. The first essay, by Professor Mitchell, is especially fine.

CHAPTER II

ELEMENTS OF THE ECONOMIC ORDER

BEFORE proceeding with an examination of our economic institutions, we shall survey the elements of the economic order, i. e., the materials with which our institutions may work. The ease or difficulty of the task of satisfying human wants depends upon the presence or absence of these elements. They may be grouped under four heads:

Natural Resources
Labor Force
Accumulated Wealth
Scientific Knowledge.

It is obvious that the nature of each of these four factors differs from time to time and from place to place. We shall discuss them here with particular reference to the United States.

Natural Resources

Any region has little voice in determining the extent of its natural resources. It must take what the ages, aided by glaciers and floods, have provided, and do the best it can. Where nature has not proven liberal, the urge for expansion of natural boundaries receives added stimulus. The United States, as we shall see, is a child of good inheritance. Nature has endowed it with enviable riches.

The most important natural resource is land. And the United States is the third largest country in the world. Furthermore, of its total area more than one-half can be made to bear crops, and only four per cent is unfit for use as farm, forest, or pasture land. Compare this with Japan, which is so mountainous that only one-sixth of its entire area can possibly be brought under cultivation. Large areas of frontier land existed in the United States as late as 1890. To the present time, land resources in the United States have been abundant, but the rapid rise in land values in the last decade is a sign of increasing scarcity and the problem of proper use of land is therefore becoming important. Competition goes on continually between the different productive uses for land—pasturing, forestry and crop cultivation. Parallel with the rise in land values in recent years, the area under crop cultivation has steadily increased at the expense of forest and pasture land. Much of the land at present unused requires irrigation, drainage or intensive fertilization. Although the area under cultivation can actually be doubled, the acres now cultivated are those which are more fertile and doubling them would by no means double the total yield.

The most pressing land problem in the United States at present is that of maintaining the area of the national forests. These forests were originally extensive, more than two-fifths of the country being covered with virgin growth. The least accessible one-sixth of this is still uncut and second growth covers an additional two-sixths of the original area. To-day, lumber is used at about four times the rate of growth, in spite of the extensive use of substitute materials in construction work.

A country's natural resources must also provide the stuff of which manufactured products are to be made. The nature of the economic activity of any nation, as well as its economic and political relationship with other nations, is largely determined by the nature and extent of its supply of raw materials. Fuels are exceedingly important. With these, too, the United States is well provided. It has about one-half the known coal and one-third the known petroleum resources in the world. Minerals likewise are essential to an active manufacturing industry; iron, copper, gold, silver, lead and zinc are all found within the boundaries of the United States. In fact, tin is the only important mineral lacking.

In addition to the actual raw materials consumed by the economic system, there are other natural conditions in the United States which aid economic processes. For example, the coasts are indented with many excellent harbors; numerous navigable rivers and the Great Lakes provide cheap and easy communication, especially important before there were continental systems of railways. The water power resources are greater than those of any other country in the world except the Congo States in Central Africa. Other factors such as climate, location, and topography have played and still play their parts in shaping the American economic system.

Labor Force

Since the experience in the Garden of Eden, a very El Dorado of natural resources has always proven of little significance without an adequate labor force to utilize it. Human energy, mental and physical, is required to turn resources into forms for use. But the entire population of a country cannot be counted as its labor force.

In 1920, the pay roll for the United States included nearly 42,000,000 persons. More than 95 of every 100 men between the ages of 20 and 65 were gainfully employed, and 24 of every 100 women. The latter figure unfortunately excludes somewhat ever 20 million women who do strenuous housework but receive no recognized pay for it. Furthermore, there are many persons on the borderline between the working and leisure class, who are occasionally enticed into the working group by some emergency such as the war, or by the temptation of high wages.

Important changes are taking place in the number of individuals who make up the labor force. The agitation and repeated legislation against child labor, the immigration restriction act, the compulsory school attendance laws, the extension of university education privileges, and the gradual decline in the birth rate seriously reduce the number of workers. On the other hand, the decline of the woman's-place-is-in-the-home theory and the consequent opening of many occupations to women have added many workers. Modern medical discoveries and increased sanitation, by tending to decrease the amount of sickness among workers, also operate in the same direction.

The term pay roll must not be misunderstood.

On it appear not only wage-earners, but all those gainfully employed—railroad presidents as well as ditch-diggers, bank clerks as well as cowboys. The following table shows how the workers were distributed by industries in 1920, when the last Federal Census of Occupations was taken:

Industry	*Men* (in millions of persons)	*Women*
Manufacturing	10.9	1.9
Agriculture	9.9	1.1
Trade	3.6	.7
Transportation	2.9	.2
Clerical occupations	1.7	1.4
Domestic, personal service	1.2	2.2
Professions	1.1	1.0
Mining	1.1	..
Public Service	.7	..
Total	33.1	8.5

The greatest changes that would come to light if we compared these figures with those of, say, twenty years ago, are a marked decrease in the number of agricultural workers and an increase in the number of manufacturing and clerical workers.

The strength of the labor force is determined not by number of workers alone. Their ability must enter into consideration as well. It is just as much an increase in the labor force to develop John Smith's abilities so that he can do more and better work as it would be to give him an apprentice to help him. Under the handicraft system a strict apprenticeship, sometimes lasting ten years, was required in many trades. The worker acquired his trade training in that way. Today more than one-quarter of the total population of the United States goes to school every day. Less than one-tenth of these ever go on to high school, and a much smaller proportion to colleges and universities. An estimate made by the author in 1922, fixed the number of graduates of colleges and universities in the United States at that time as 770,000, or about 1 in every 140 persons. The importance of the general public school education is shown by reports such as that of the New York State Industrial Commission, which estimated that one-half the accidents in New York factories, resulting in a loss of $50,000 per day to industry—besides the human loss—are caused by ignorance of the English language.

Important as this general education is, it is also a fact that children generally leave public schools, even colleges, without any specific preparation for earning their livelihood. This is less general, however, than twenty years ago, for trade education has developed rapidly in the last decade. In 1917 the Federal Government offered to share with the state governments the costs of vocational education. Five years later nearly 500,000 students were enrolled in vocational schools. In addition there are numerous private schools preparing workers for clerical occupations; the attendance at commercial and business schools is more than 300,000. A few unions have realized the need for trade education, with the result that schools like that of the Printers' Union have been organized. Most trade training, however, falls on the industries themselves. Some plants have formal "vestibule" schools, but more often the worker is more or less instructed while at the job, by the workers. This frequently results in his working on without much understanding of the process he is engaged in, or the significance of the job itself.

The development of machine technique in production has, however, reduced the need for elaborate training. Today, men with some mechanical training are able to do many different jobs. Fifty years ago men had to be trained for one specific trade, and the knowledge gained in that training was of little help in any other trade. Today a man who has learned to use or tend a machine in one factory can quickly learn to tend another somewhere else. Machine industry and the use of mechanical appliances in every-day life—changing tires, adjusting carburetors, sharpening lawn mowers, repairing sewing machines—have given us a familiarity with machinery that is an important and distinguishing characteristic of the labor force in this country.

Accumulated Wealth

Any economic system which had only its natural resources and its labor force for its instruments could achieve very limited ends. It would lack any accumulated wealth—the goods which man has produced but not yet consumed, and for which there is further use. Among the more important of such goods, are buildings, machinery, roads, and improvements in land such as clearing, fencing and draining. Accumulated wealth provides means for lightening the tasks of further production; that is its essential purpose. The energy devoted to making an electric motor is really spent to save a greater amount of labor later. No person directly consumes the motor. The fisherman who temporarily falls behind because he takes time to make a net will soon surpass his brother who spends all his time catching fish by hand.

This simple principle lies behind all our modern machinery and accumulated wealth.

Wealth can be accumulated only by actually producing more than we consume. Nations save in the same way as individuals. While certain men built railroads, others had to produce not only the goods they required for their own consumption, but those which the railroad builders needed. Some idea of the extent of the savings of the United States is given by the following items on what might be called its balance sheet for the year 1922:[1]

20,700,000	Dwellings
503,000,000	Acres of Improved Land
388,000	Miles of "Surfaced" Roads
262,000	Miles of Railroad Track
12,230,000	Automobiles
1,485,000	Electric Motors in Factories
170,000	Steam and Other Engines in Factories

Certain other items which should be included can be measured only in terms of dollars. They are as follows:[2]

Farm Implements and Machinery.........	$ 2.6 billion
Manufacturing Machinery and Tools.......	15.8 billion
Street Railways, Ships, etc..................	15.4 billion
Railroads and Equipment................	20.0 billion

In addition, society always has on hand a certain amount of goods produced for immediate consumption but not yet consumed. Their value is shown by the following figures:[1]

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[1] Statistical Abstract of the United States, 1923. Washington, 1924.

[2] U. S. Census Bureau, Estimated National Wealth, 1922. Washington, 1924.

Personal Property, such as Jewelry, Clothing, Furniture, etc.	$39.8 billion
Undistributed Products	36.1 billion

This part of the accumulated wealth, the goods in process of consumption, makes unnecessary the production of other goods to replace them until their consumption is complete. We are that far ahead of the game. We cannot use up clothing all at once but must wear it out gradually. Its lasting power is a decided asset. The problems of ownership and administration of wealth are among the most salient in our economic system. They are dealt with in a later section of this book.

Scientific Knowledge

An economic order having rich natural resources, a strong labor force, and abundant wealth would still be handicapped severely if it did not possess the accumulated knowledge of mankind as a fourth social resource. If the Brooklyn Bridge should fall into the East River, it would be a great catastrophe, but it would be as nothing compared with the loss mankind would suffer if the knowledge required to build another such bridge should be lost. In the first case a new bridge could soon be built. In the second case men would have to struggle centuries to develop once more the complicated mathematical laws and engineering technique of bridge-building. We have come to accept our arithmetic, our language, and our literature without realizing how much rests on them as foundations. We have only to imagine what would happen to us if suddenly we should all forget how to read or how to employ the multiplication table.

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[1] U. S. Census Bureau, Estimated National Wealth, 1922. Washington, 1924.

Our present economic activity is based upon exact scientific knowledge far surpassing that of even a few years ago. Our existence depends upon it. Some insight into the rapidity of our progress in applying science is shown by figures illustrating the rate at which new inventions are being made. Patents issued by the American patent office by decades since it was organized in 1790 have been as follows:

During 1790	3	1851-1860	23,140
1791-1800	304	1861-1870	79,612
1801-1810	1,093	1871-1880	125,520
1811-1820	1,783	1881-1890	207,850
1821-1830	3,044	1891-1900	220,840
1931-1840	5,652	1901-1910	315,351
1841-1850	5,942	1911-1920	383,885

Source: Thorp, Willard L. *The Integration of Industrial Operation.* (Census Monograph III.) Washington, 1924.

These figures indicate strikingly the present rate of increase in our technical knowledge, as reflected in the new implements and machines recorded.

Although many of these new discoveries and inventions have been of minor importance, a few stand out as landmarks in our advancement. Some of these are:

1764	Spinning Jenny	James Hargreaves
1765	Steam Engine	James Watt
1787	Power Loom	Edward Cartwright
1793	Cotton Gin	Eli Whitney
1807	Steam Boat	Robert Fulton
1829	Locomotive	George Stephenson
1832	Harvester	Cyrus McCormick
1835	Telegraph	Samuel Morse
1839	Rubber Vulcanizing	Charles Goodyear
1846	Sewing Machine	Elias Howe
1846	Bessemer Steel	William Kelly
1875	Telephone	Alexander Bell
1879	Electric Light Bulb	Thomas Edison
1895	Automobile	George Selden
1896	Wireless Telegraph	Guglielmo Marconi
1903	Aeroplane	Wright Brothers

By our present law it is possible for an individual, by means of patents, to keep control of a discovery for a period of seventeen years. The wisdom of this arrangement has often been questioned. Although it provides incentive to inventors, by making it possible for them to reap the profits of their ingenuity, it also makes possible the temporary suppression of discoveries having high social value. However, after the period of protection is over, the discovery takes its place as part of society's resources.

We have sketched the materials available in America for use in our economic system: natural resources, labor force, accumulated wealth and scientific knowledge. These are of no use whatever when separated. They must be combined and organized. It is the function of our economic institutions to utilize these materials in such a way that goods and services will be produced and distributed to individuals. How this is done is the subject of the remainder of this volume.

An excellent description of the natural resources of the United States, though spread through more than 800 pages, is found in J. Russell Smith's *North America.* For a description of the labor force, there is no better source than the pages of the *Census of Occupations.* Certain of the essays in *Population Problems,* edited by Louis I. Dublin, are extremely valuable, and Horace M. Kallen's *Education, the Machine and the Worker* raises many issues in the field of training. For data on wealth, there is the Census, and Willford I. King's *Wealth and Income of the People of the United States.* For a discussion of the development and significance of scientific understanding, there is nothing better than James Harvey Robinson's *The Mind in the Making,* and *The Humanizing of Knowledge.*

To here Fri.

PART TWO

THE INSTITUTION OF MACHINE TECHNIQUE

CHAPTER III

THE MACHINE AND ITS EFFECTS

A TECHNIQUE is a recognized way of doing things. Machine technique is therefore the machine way of doing things.

What Machine Technique Is

A machine must be distinguished from a tool. A *tool* is an implement used by a man to assist him in some task, the man supplying the necessary energy himself. A *machine* is an implement used by a man to assist him in some task, the necessary energy being supplied from some outside source. A tack-hammer is a tool; a pneumatic riveter is a machine. An ordinary shovel is a tool; a steam shovel is a machine.

Tools existed very early in the history of man. The cave-man used a stone tied to a stick for a hammer. As man progressed these instruments became complicated and ever more numerous. The English craftsman, working in the Middle Ages, had often a wide variety of relatively efficient tools at his disposal. But the workman always remained the center of the process. His tools were his helpers. The actual quality of the product depended to a large degree upon his personal skill and handiwork.

The Development of Machinery

Machines have also existed in simple form for many centuries. Waterwheels, for example, were used in mills in ancient times to provide power. But the widespread use of outside power as energy for machinery is relatively recent. The steam engine did not come into use in England until after the American Revolution, though there was presumably no connection between the two. And it was not until the early years of the nineteenth century that power machinery was much employed in the United States. The extreme rapidity with which the knowledge of the machine technique has developed has been indicated in the previous chapter under the discussion of technical knowledge. Yet the nearly universal utilization of the power machine is a development of very recent years. As late at 1879 only one-third of the manufacturing establishments recorded by the United States Census had power machines. In 1919 more than 82 per cent had them. In the manufacturing industries, the steady increase in the use of power machines appears in the following table:

Five-year Periods	*Percentage of Increase in Primary Horsepower*	*Percentage of Increase in Wage Earners*
1899-1904	33.6	16.0
1904-1909	38.5	21.0
1909-1914	20.1	6.4
1914-1919	31.5	29.3
1919-1925 (six-year)	21.8	—8.6
Total, 1899-1925	256.1	86.9

Press release, Department of Commerce, May 11, 1927.

Machinery we have more and more with us. Even the simplest processes, such as slicing meat, pasting labels, or wrapping bundles, are performed by machinery. Firms are able to advertise, "Our product untouched by human hands." We no longer marvel at the mechanical wonders about us; we are accustomed to them. In other words, the machine technique has become a habit of thought and action—a social institution.

Machine Technique and the Worker

In general, machinery has relieved the laborer of many of the more arduous tasks. Nearly all kinds of heavy work are now done by machines. So also are the simpler processes. Only the more complicated tasks are left to the worker alone, and even in some of these he is partly helped by machines. The machines which men have developed are mainly of two types: first, those which aid him but still require his will for direction and, second, those which are automatic and perform their tasks without human direction. They require three kinds of workers.

Machines like the steam shovel are of the first type. The man who handles the throttles needs much more skill than he would if using a hand shovel. The service of the machine lies in the fact that its strength and capacity and willingness to labor far exceed those of the man alone. The will of one man, with the aid of such a machine, can accomplish more than the bodies of five hundred men can do. The machine greatly increases the worker's power and reach; but it also demands more of him.

Automatic machines are those like the power loom. They are so designed that they carry through their operations without human direction, once they are fed the materials. The attendant must supply the machine with material and remove the finished products; the machine does the rest. The machine tender is a type of worker who did not exist two hundred years ago.

Yet another type of worker is needed for both kinds of machines—the repair man. The machine operator usually is able to make minor repairs.

But only a machinist especially trained for the purpose can repair more serious flaws in the machinery or clear away the results of accidents. He is much like the skilled craftsman of the handicraft system.

Between the work of the cobbler who makes a whole pair of shoes by hand, with the aid of a few tools, and that of the man who feeds leather into a machine in a shoe factory all day, there is obviously a vast difference, one which affects the worker no less than the product. Some workers are more content at the first kind of work, others at the second, depending on the physical, mental and nervous make-up of the individual. Generally the machine requires a more exact, rigid and often more monotonous operation than did handicraft.

Machinery and Production

The chief direct effect of the use of machinery has been to increase the product of men's labor. We all know that one man with a tractor can plow more farmland than a man with a horse-drawn plow, and a man with a hand-pushed cultivator is left quite out of the picture. This increase due to machinery is found in all branches of industry. In manufacturing, the Department of Commerce reports that from 1899 to 1925, the quantity of production increased nearly 180 per cent, the number of workers but 87 per cent. The increase in production is explained by (1) technical improvements, and (2) the rapid growth of industries where machinery is of greater importance.

Figures for specific industries bring out this point more clearly. Between 1879 and 1919 the tonnage of pig iron produced increased from 66 tons per worker per year to 744 tons per worker per year. In the salt industry in the same period the increase was from 1400 barrels per worker per year to 7600 barrels per worker per year. Similar increases, though in general not so great, are recorded in nearly all industries, and are in nearly all cases made possible by marked improvements in the machinery used.

Social Effects

The machine process extends beyond the machine itself. It has produced a movement toward standardization which has been felt in all our activities and colored all aspects of our life. We have standard measurements, standard grades, standard gauges and even standard time. The use of machinery has made possible a precision of action which the craftsman of earlier times could never hope to acquire. In fact, factories can now turn out products so much alike that, if they are complex, the parts are often interchangeable. The craftsman was concerned with each individual piece, and every piece was slightly different from every other one. The machine takes the pattern and makes millions exactly alike. But patterns may be set not only in the making of goods for consumption. The machine process tends to standardize us as individuals also. We not only use the same goods, we also go through the same schools, read the same papers, pursue the same fashions, and see the same moving pictures. Some fear that we are also coming to think the same thoughts.

The influence of certain specific machines in altering our social life has been tremendous. The automobile, for example, has quite revolutionized society. By it distance has ceased to be an insuperable barrier; even the railroads did not confer so great a freedom of movement. The life of the farmer is no longer one of isolation. The urban dweller can escape from the city. The automobile has changed many of our economic processes. It has changed our use of leisure. It has even been charged with changing our morality. The printing press, the telephone, the radio and thousands of others are of the greatest importance in determining the nature of our civilization.

Natural Laws

The machine technique has manifested itself in yet another direction—the search for natural laws. It is essentially scientific. It demands that we search out the truths of the physical and chemical world, examining such phenomena as light, heat, space, steam, electricity. We must know cause and effect, for the designing of machinery is the application of such truths. The machine technique stimulates logical thought, for it is essentially matter-of-fact. There is little place for romance or imagination. It operates according to physical law.

Thereby also has momentum been given to a movement already started in men's thinking, toward a philosophy based upon natural laws and cause-and-effect explanations, rather than upon the older theories of Divine Causation and Divine and Natural Rights. The new philosophy could not accept the premises men held before the age of scientific discoveries and their application to production—the premises of the Divine Right of Kings, the Supreme Authority of the Church, etc. Thus men have been stimulated to ask, Why? And thus has been stimulated the modern attitude of inquiry as to the fundamental justice and reasonableness of our social institutions.

Economic science is often considered as falling into three great divisions—production, exchange and distribution. Production covers the preparation of goods for consumption; exchange is concerned with price-fixing and markets; distribution deals with the amount of goods or ownership rights which each individual receives. The institution of machine technique is essentially an institution of production. It is concerned chiefly with the preparation of goods for consumption.

Production

Production naturally falls under four heads—agriculture, mining, manufacture and transportation or communication. The institution of machine technique, which is the prime institution of production, will be further discussed in the next four chapters, each of which deals with one of these forms of economic activity.

The horror of the early machine era is vividly drawn by Karl Marx in *Capital,* while a specific story of the trend of the times during the first half of the nineteenth century is delightfully presented by Graham Wallas in *The Life of Francis Place.* For more recent discussions, see Thorstein Veblen's *The Place of Science in Modern Civilization,* or the much more erudite *The Instinct of Workmanship.* An excellent example of the present state of science is Edwin E. Slosson's *Creative Chemistry.* Also, see the various books by Whiting Williams, and Cornelia Stratton Parker, dealing chiefly with the worker and the modern job.

Three
By: Mac.

CHAPTER IV

AGRICULTURE

THE HISTORY of agriculture began when man first ceased wandering about and settled in one place long enough to reap what he had sown. Wheat, corn, olives, grapes—such were the products of the primitive farmers, raised with much toil, little knowledge of implements, and no scientific assistance whatever.

Mediaeval Agriculture

In the Middle Ages, England possessed few cities, but rather many small farming communities, each practically self-sustaining. Each community, called a vill or manor, was subject to a lord or churchman, and the inhabitants were required to pay various taxes and charges to him, generally in the form of produce. The right to use the land, he dispensed as custom and tradition directed, tenancy passing from father to son. The lord presumably provided protection and justice to tenants; in return the tenant, or villein, paid various taxes, worked on his lord's land a stipulated number of days per week, was liable to military service and otherwise was bound to lord and land.

Farming itself had long been carried on according to well established custom. The entire manor was divided into three sections, each section being sown in turn with spring crop, fall crop, or lying fallow. The land was divided into many strips of about an acre each and the villein cultivated his allotted number of strips, usually about thirty, scattered about the manor. The crops to be planted and methods of cultivation were fixed hundreds of years before. There was no opportunity for the tenant to use his own initiative. Years of tradition bound him to the land and heavy punishment was meted out to any man who dared to disregard the custom of his ancestors. Somewhat similar conditions still exist among peasants in parts of Russia and Central Europe.

Such a rigid system, even then breaking down in Europe, was not readily transported to America, where there were no established forces of tradition and fertile land was plentiful. Consequently, instead of reproducing the mediæval system of England, America developed in general a system of farming in which each farmer was free to make experiments. He might take up new land, determine the nature of his own crop, the improvements to be made and the technique to be used, and control the disposition of his product.

The Agricultural Revolution

The advancement of scientific knowledge and the development of machinery, usually discussed in connection with manufacturing, have transformed agriculture also. Fertilization and crop rotation, both known to the ancients as methods of maintaining the fertility of the soil, have been carefully studied and put upon a more scientific basis. Artificial drainage and irrigation have been widely used, thus adding to the area of fertile land. In 1919 nearly 20,000,000 acres in the United States were under irrigation and 53,000,000 acres artificially drained. Such projects require enormous expenditures and thorough co-operation from the individuals benefited. The United States Reclamation Service is doing much to further such land improvement. Spraying and inoculation have been applied as preventives of pests and plagues, and the new sciences of seed culture and stockbreeding are increasing the variety and improving the quality of agricultural products.

The reduction in the number of farmers, due to urban migration, has been made possible without decreasing output, by their replacement by machinery. According to the Census of 1925, the number of tractors on farms was 506,745, as against 246,083 in 1920. The extension of use of farm machinery has kept pace with general progress in scientific agriculture. In America, because there is an abundance of good land, the factor limiting agricultural production has been the scarcity of labor. Consequently the invention of farm machinery has been of the utmost importance, for machines, as we have seen, may take the place of human hands. It is therefore natural that in this large country the use of farm machinery should be more general and the invention of farm machinery more advanced than elsewhere.

Although the number of farmers and the extent of farm acreage have not increased since 1880 as rapidly as the total population, the total agricultural output has increased at a somewhat faster rate. The producion per acre of improved farmland increased 38 per cent from 1880 to 1920, while the production per farmer increased 78 per cent. Compared with European countries, the United States has always produced the largest crop per man but the smallest per acre.

Since the area of land which can be used for agricultural purposes is limited, such an increase in productivity by the use of scientific methods of cultivation is of great importance in meeting the problem of feeding the world's population. The relationship of population growth and agricultural output has worried many prophetic minds, who fear that a time may come when the population will need more food than earth can provide.

The Significance of American Agriculture

Almost one-half of the land area in the United States is devoted to farming and nearly one-half of the whole population lives in communities of less than 2500 inhabitants. Nearly 29,000,000 persons actually live on farms. More than 26 per cent of the gainfully employed population receives its income from agricultural work.

In 1925-26 the total value of farm products in the United States was 16.8 billion dollars. Agriculture contributes about one-sixth of the annual national income. The crops valued at more than 100 million dollars in 1926, listed in order of importance, were: corn, hay and forage, cotton, wheat, white potatoes, oats, tobacco, apples, cottonseed and barley. The variety of crops in the United States is extraordinary, ranging from alfalfa to peanuts and pomegranates to yams. The farms are more than able to provide the nation with food and nearly one-sixth of the total product is shipped to foreign countries.

Although the total agricultural production of this country has been increasing year by year, the increase is much slower than in manufacturing, trade and transportation. Whereas 80 per cent of the workers in the United States were engaged in agriculture in 1820, only 26 per cent of the workers were so employed in 1920. Nevertheless the increase in agricultural production has been enormous and agriculture has by no means lost its position of importance in American industry. The purchasing power of more than half of the population is still dependent, directly or indirectly, upon the agricultural output.

The Size of Farms

The application of machinery to work on the farm and the introduction of better means of transportation for marketing farm products have made possible a wide variation in the size of farms. This variation is due in large part to the dissimilar requirements of specific crops: a large cabbage farm requires less acreage than a small wheat farm. In Nevada in 1925 the average farm contained 1,053.5 acres, in South Carolina only 61.6 acres. At the present time, however, the average size is considerably smaller than fifty years ago, due chiefly to the breaking up of plantations in the South and cattle ranches in the West.

There has as yet been no clear demonstration that the operation of large farms is particularly advantageous. Specialization and the division of labor are not as feasible in agriculture as in manufacturing. It is impractical to have one group of men do the planting, another the cultivating, and a third the harvesting. A large factory does not cover many acres, but a large farm is measured in square miles. Careful supervision is impossible. Distance involves wasted time. Farming may be expected therefore to continue as the outstanding persistently small-scale activity in our economic system.

Farms are small not only in land area but also in the number of men each employs. Many factories have more than a thousand workers on the pay roll, but farms seldom have as many as ten. Persons engaged in farming may be classified as follows:[1]

Employers and Self-employed	8,251,313
Supervisors	101,233
Wage Earners	2,600,612
	10,953,158

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[1] Leo Wolman, The Growth of American Trade Unions, 1880-1923. (National Bureau of Economic Research Publications No. 6) New York, 1924. These figures are based on census reports as of January 1, 1920. Because the census was taken in midwinter some casual laborers who work on farms in summer doubtless reported their winter employment as their regular occupations.

In other words, most farmers work their farms alone or with the assistance of the members of their families. This form of economic independence does not appear to any like degree at any other point in our economic system, except among professional men and in retail trade. As a contrast, in manufacturing there average fourteen wage earners for one employer.

Diminishing Returns

Agriculture is perhaps the most appropriate place to describe a condition which prevails throughout the economic system generally: that when several factors are combined to yield a certain product, it usually happens that increasing any one of the factors brings a smaller and smaller addition to the total product. The following table gives a single illustration:

The effect of bone meal upon yield of wheat in Southern Kansas.

Pounds of Bone Meal	*Yield*	*Increase*	*Value of Increase*
	(Bushels)		($1.20 per bu)
0	10.6	...	...
30	14.9	4.3	5.16
60	17.3	2.4	2.88
90	18.7	1.4	1.68
120	19.5	.8	.96
150	19.9	.4	.48
180	20.2	.3	.36

Source: Department of Agriculture Yearbook, 1926.

It is clear that as additional sacks of bone meal are used, the increase in output becomes smaller and smaller. As it happens, each 30-lb. sack costs about 75 cents. The fourth sack yielded an increase in product worth 96 cents, and was profitable. A fifth would only increase the product by 48 cents, resulting in a loss.

This same principle is more often used in discussing the relationship between agriculture and population. For diminishing returns are the result of increasing application of labor to the soil. Certainly twice the number of farmers could not double the output from the soil of America. We must pin our hopes either on the declining birth rate or the continual advance in agricultural methods.

Forms of Tenure

In the United States, according to the Census of 1920, three of every five farms are operated by their owners, a very small number by managers—these are the larger enterprises in the West—and the remainder by tenants. The relationships existing between tenants and owners are of various kinds and are grouped by the Census Bureau as follows:

1. Share tenants, who pay with a certain share of their products, as a half, a third or a quarter.

2. Croppers, share tenants for whose work animals are furnished by the landlord.

3. Share-cash tenants, who pay partly with a share of the products and partly with cash.

4. Cash tenants, who pay a flat cash rental.

5. Standing renters, who pay a stated amount of farm products for the use of the farm, as three bales of cotton or 500 bushels of corn.

The idea of the pioneer was to take a piece of wilderness and make it into a farm. Today the farmer takes something already of value and tries to increase its value or make it produce additional values. The present-day farm can be obtained only by means of capital. The ambitious man, who has not funds with which to purchase a farm, must rent one. Tenancy is a step on the ladder to ownership. Nearly half the tenants have been farm laborers, as their first step. The percentage of tenancy has increased from 25 to 39 per cent in the last forty years. What effect this may have on efficiency of production or further farm improvement is not yet evident. Many of the independent farmers have found it necessary to borrow and the number of farms bearing mortgages has steadily increased, until in 1920 about two-fifths of the farms in the United States were mortgaged.

Although farms must be operated as small units, it is quite conceivable that there might be large scale ownership of farm property. This is not general, although the southern plantation is an example of such a condition. In the United States, one-third of the rented farms are owned by active farmers, one-third by retired farmers and probably not more than one-tenth by absentee landlords.[1]

Agricultural Credit

Agriculture is essentially a seasonal industry. A shoe retailer is continually buying and selling. A farmer is continually buying but he may sell his entire year's crop in a single day. His credit problem may be one of three kinds. 1 He may require funds to tide him over until he markets his new crop, after his return from the previous year has been exhausted, 2 He may require sufficient credit, after a year of crop failure, to enable him to carry through a whole year's financing, 3 He may require credit for investment in permanent improvements which will repay him only gradually. The banks in the Federal Reserve system presumably are able to take care of his demands for loans of less than nine months' duration. In 1916, twelve Federal Land Banks were organized, to be directed by the

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[1] U. S. Department of Agriculture, Yearbook, 1923, p. 538.

Federal Farm Loan Board, which extend credit to farmers for periods of from five to forty years. In March, 1923, departments were established in the Federal Land Banks called Federal Intermediate Credit Banks, which extend credit to farmers for periods of from six months to three years.

Marketing

The early colonists raised agricultural products for their own consumption. Nowadays the farmer produces for a distant market. The more specialized western farmer, who raises wheat and corn, may even buy the vegetables he eats. The problem of marketing their products is a most difficult one for the farmers. They are many and scattered widely over the country. The traders are few and well acquainted with each other. The farmers have, therefore, suffered in the past from bargaining under such conditions. The uncertainty of the crop returns from year to year results in agricultural prices which are apt to fluctuate widely. The farmers have felt that they have suffered when consumers' prices were low and not benefited when they were high.

The evils became particularly evident in the cotton industry and the United States government undertook the task of making preliminary crop reports, so that the farmer could know whether the brokers were telling him the truth in reporting that the crop was too large and that he had better sell his crop even at a low price if and when he had the chance. But the crop reporting systetm has not solved the problem. Now co-operative organizations,[1] which do the selling for the group through a single agency, are springing up among the farmers. Such organizations have proved particularly successful among growers of nuts, raisins, oranges, cotton, tobacco, onions, and cranberries, and among dairymen.

Rural Life

A great change is taking place in the form of rural life. These changes can be traced very definitely to the wider application of the machine technique. They are developments which provide conveniences and pleasures not heretofore available to the isolated farmer. The Census of 1920 lists improvements such as the following:[2]

Farm Facilities	*No. of Farms*	*Per Cent of All Farms*
Automobiles	1,979,564	30.7
Motor Trucks	131,551	2.0
Tractors	229,332	3.6
Telephones	2,498,493	38.7
Water piped into house	643,899	10.9
Gas or Electric Light	452,620	7.0

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[1] For further discussion of co-operative societies see p. 244.

[2] U. S. Census Bureau, Census of Agriculture, 1920. Washington, 1922.

In 1925, the Census Bureau reported that radios were found on 284,053 farms. These and many other improvements are important chiefly as factors tending to check the present migration from country to city life by raising the plane of rural life.

Agricultural vs. Manufacturing Interests

The agricultural class in the United States has never been a peasant class. The farmer has been a man equal in ability and intelligence to the city dweller. He has taken advantage of mechanical inventions and is also gradually taking advantage of economic instruments in the form of better organization. That the farmer is class conscious is evidenced by the Granger movement, the Non-Partisan League and the Agricultural Bloc. On many problems such as the tariff, transportation, banking and credit, marketing, price determination, and the operation of commodity exchanges the farmers have a common ground and a point of view, often contrary to the position of the manufacturing interests.

This division into agricultural and manufacturing interests was emphasized by the movement of prices during the years after the war. Both agricultural and non-agricultural prices rose to about the same point in the early months of 1920. But the decline which began in June of that year was much more rapid and severe in the prices of agricultural products. The lowest point reached by agricultural prices was 24 per cent above the pre-war level, by non-agricultural prices 55 per cent above. The gap has steadily closed, but not before the farmers made many attempts to bring about legislative and economic changes which would aid them in their distress. This distress is clearly seen in the following table, which shows the amount left to the farmer after a proper allowance has been made for wages, which may be considered as reward for capital and management:

Year	*Reward for Capital and Management, as a Percentage of the Operator's Net Investment*
1919-20	5.7
1920-21	—4.2
1921-22	—2.3
1922-23	1.2
1923-24	1.6
1924-25	3.2
1925-26	3.5

The agricultural depression was due largely to the over-expansion of farm enterprises during the war and the loss of foreign markets afterwards. The farmers were left with a heavy debt burden, and ability to produce more than their markets required. As a result, the number of bankruptcies among farmers has been very high and the actual number of active farms reported by the Census of 1925 was 75,735 less than in 1920.

An excellent source for data on mediæval agriculture is afforded by Barbara and John Hammond's *The Village Labourer*. The difficulties and trials of modern agriculture appear in Margaret Wilson's *The Able McLaughlins,* Willa Cather's *My Antonia,* and *O Pioneers,* and Frank Norris' *A Deal in Wheat*. Significant problems relating to American agriculture are discussed in the *Agriculture Yearbook* annually. Other excellent books are Edwin G. Nourse's *American Agriculture and the European Market* and Benjamin H. Hibbard's *Marketing Agricultural Products*. For current conditions in agriculture, see the Department of Agriculture *Crops and Markets,* and the *Wheat Studies* of the Food Research Institute of Stanford University. See *An Introduction to English Economic History and Theory,* by William J. Ashley (1894), pp. 5-49 on the English Manor System.

CHAPTER V

MINING

CERTAIN natural resources are replaceable while others are exhausted upon use. In the case of agriculture, land can be kept fertile for an indefinite period by proper fertilization and scientific rotation of crops. In this chapter will be considered those resources which are fixed in amount and, when once used, cannot be replaced. The term mining is here used in accordance with the Census definition, to include quarrying and the extraction of petroleum and natural gas, as well as the extraction of ores and earths.

The Nature of Mining

Statistics do not properly indicate the importance of the mining industry. Its products are but one-seventh as valuable as those of agriculture. It employs only one million workers as compared with the eleven million in manufacturing. Nevertheless, mining must be considered as ranking with these other economic activities, for it is the key industry in our modern machine system. It provides ores and fuels. The ores are made into machines, which are operated by means of the fuels. Without the metals—iron, copper, zinc, and lead—our modern machinery could not exist. Without coal, fuel-oil, and gasoline most of our engines would remain at a standstill.

Mining can hardly be considered as a single industry, for its branches are in great measure dissimilar. The technical processes used may consist, for example, of removing earth from surface pits by means of steam shovels, as in the case of most iron ore; deliberate sawing, as in the case of marble; undercutting and blasting, as in the case of coal; or washing down with water under high pressure, as in the case of the precious metals. Petroleum and natural gas present yet an entirely different problem, being extracted by sinking pipes into the ground often to a depth of several thousand feet.

Fuels

Although there are more than seventy mineral products regularly surveyed by the United States Geological Survey, few are of notable importance. In 1919 the total mining product in the United States was valued at 3 billion dollars, but coal and petroleum alone accounted for 77 per cent of the total, while their production engaged 80.1 per cent of all wage earners employed in mining enterprises. In other words, more than three-quarters of all mining activity goes to the production of fuels. Metals such as iron and copper accounted for an additional 18 per cent, the quarrying of stone for 3 per cent and all other products only 2 per cent.

This dominance of fuels is relatively recent. The first coal known to have been mined in the United States was anthracite or hard coal, mined in 1807. Production did not reach 1 per cent of the present output, however, until 1850. It was not until 1870 that soft, or bituminous coal, now much the larger industry, was produced in as great quantities as anthracite. Petroleum has a history about one-half as long as that of coal, having been discovered in 1859 in Titusville, Pennsylvania.

Not all the mining industries are of such recent development. In 1620, an iron smelting "workes" began near Jamestown, Virginia, but its course was soon terminated by an Indian massacre. In 1643, smelting and manufacturing of iron was begun at Lynn, Massachusetts, and was not so tragically interrupted. But the outstanding development has been in the extraction of fuels, owing to the increasing scarcity of wood and the great demands of the machine technique as expressed in the locomotive, steam engine, gasoline motor, and oil burner.

Mining is perhaps the most exciting of all industries. It is impossible to tell with certainty what lies beneath the soil, although geologists are now employed by many mining companies to bring their scientific knowledge to bear on the problem. Spurred on by the luck of others, the prospector, at least in the case of petroleum, must sink a hole possibly 2,000 feet into the ground, with some chance of winning and much chance of loss. Unsuspecting settlers in Minnesota became wealthy when it was discovered that their homesteads were beds of iron ore. The exciting life of gold prospectors has long been the subject of romantic fiction. The history of Nevada has been one of population gained and lost as gold fields were discovered and exhausted. *Risks*

Such a situation has certain noteworthy consequences. First, it causes an unequal and usually unjust distribution of wealth. Many individuals put forth the same effort; certain favored ones receive enormous returns while others not only get nothing but lose all they had. In some cases the return may be a reward for extraordinary energy and foresight, but more often it is due to blind luck. Second, the unavoidable uncertainty gives rise to many kinds of fraud and deception. Oil and copper stocks are notoriously subject to suspicion; frequently they are sold on no more substantial basis than the worth of the glittering prospectuses that attract their victims. In early days, gold mining was similarly the occasion for numerous frauds. Third, the uncertainty of mining results in absentee landlordism. Many persons own the land who have no intention of operating it themselves. In the United States only three-eighths of the mining land is owned by mining companies. Only one-twelfth of the petroleum land is owned by those who operate the wells. The owners of the rest lease their property and receive a royalty for each ton or barrel taken from the land by the operators. This is one form of ownership income, which is discussed in a later chapter.

Machinery

The use of machinery has been adopted by the mining industry on a wide scale. Although mining establishments employ only 10 per cent as many wage earners as manufacturing plants, they utilize 23 per cent as much horsepower. Of the coal mined in 1910, 37 per cent was brought out by machinery and, in 1921, 65 per cent. Electric railways underground and electric hoists have been rapidly substituted for man-power. Machine technique has been utilized also in subsidiary phases of the industry, in improving ventilation, preventing accidents and devising apparatus for rescue and the like.

Finance

Mining differs from other industries in its problem of finance. A mining company invests a certain sum in a mine. Once a mine becomes exhausted the company must go out of existence or move elsewhere. As it exhausted the mine it used up its own assets. A manufacturer has his plant left at the end of a long period of operation. The mine operator has nothing. Consequently a mine must endeavor during its period of operation not only to pay a profit on the original investment but to build up a reserve equal to the value of the resources it is using up. This is particularly true of the petroleum industry, where the exhaustion of the supply may be very rapid. The mine operator therefore demands higher returns than the manufacturer.

Coal

Although anthracite coal keeps millions of homes warm in winter, it is not an absolute necessity to the economic system as is bituminous. We have learned that substitutes can take the place of anthracite; indeed, we have been forced to find them. But substitutes for bituminous coal are not so easily managed. When the supply fails the economic system suffers severely.

The uncertainty, irregularity and expensiveness of the bituminous coal supply may be attributed in part to nature. In the first place, there is the element of mine disability. Floods, cave-ins, explosions, etc., cause mines to be idle. This is a lesser factor, except to the individuals immediately concerned, since accidents can make only a slight reduction in the output of 9,000 active mines. In the second place, there is the difficulty of storage. When bituminous coal is piled in large heaps the pressure on the coal beneath causes heat and spontaneous combustion may occur. As a result stored coal must be spread over a wide area or placed under water. The lack of proper storage facilities compels many operators to produce only when there is an immediate market. In the third place, most of the coal requires shipment. Coal is therefore dependent upon transportation, and freight costs add to the fuel bill which the consumer must pay.

But these natural causes are by no means sufficient to explain the irregularity of the bituminous supply. For one thing, about 10 per cent of the working days lost in the last twenty years can be attributed to labor disputes. With a strong, fighting union on one side and obstinate, organized employers on the other, the expiration of each wage contract is accompanied by threats of strike or lock-out which often become actualities. The fight then continues until one side is exhausted, if not both, while the public suffers severely, though patiently, and the government makes an investigation.

More important even than this is the organization or, rather, lack of organization in the industry itself. Of the 9,000 mines many are active or lie idle according to the condition of the market. The capacity of the coal mines far exceeds the actual output. Furthermore, the industry is subject to the operation of a vicious circle. When improved methods of operation are introduced, the resulting increase in output only serves to lower the price, cause failures which hit the fit and unfit indiscriminately and stimulate the search for further improvements in the technique, which under proper conditions ought to benefit the industry and the public alike. The industry has excess mines and superfluous miners, yet the occasional demand at high prices and the element of speculation serve to maintain this excess. Such a situation has unfortunate results for operators and miners alike, and the public must pay more for its coal. Operators have an uncertain income, workers irregular wages, and consumers an irregular supply at needlessly high prices.

Although these evils have long been recognized, little has been done to remedy them. The investigation by the United States Coal Commission of 1922 concluded with many recommendations to the government, the industry and the consumer for improving the situation. However, the solution may lie along more radical lines—to recognize the coal industry to be a public utility and institute government regulation, or the government to purchase the mines and lease them to private operators (the suggestion made by the English Coal Commission in 1926 to solve their coal problem), or, perhaps, even to institute government ownership and actual government operation.

Petroleum

The petroleum industry has technical problems peculiar to itself. Petroleum lies in large pools, often several thousand feet underground. Pipes are sunk to the pool, and the oil is then forced up through the pipe by the pressure of natural gas, also present in the pool. An efficient industry, from the engineering point of view, would be one which obtained as much oil and gas as possible from the pool at the time when it was needed. The actual situation is quite otherwise.

Since one pool may lie under the land of many individuals, as soon as oil is discovered, the utmost speed is used for its recovery. If one owns oil land and a neighbor has a well near the boundary, one must sink a shaft at once or the neighbor will drain all the oil away through his own well. This condition results in three types of needless waste. First, more oil wells are sunk than are needed. Second, oil is brought to the surface not as required, but as discovered. Third, because of the desire for speed, the best methods are not always used and water is allowed to seep into the oil pocket, thus destroying its value.

Since oil is projected by the natural gas present in the pool, the conservation of this pressure is essential. As wells are now operated, experts say that from 40 to 90 per cent of the oil remains underground for lack of pressure to drive it to the surface. Unless production is controlled by a single concern it is impossible to obtain the most effective use of gas pressure. This gas in itself has considerable value, but large quantities are wasted by enterprises whose sole interest is oil. Finally, since information concerning the geology of the field would be of great aid to competitors, this information is often jealously guarded and blunders are committed which might easily be avoided. The competitive system is at its worst in dealing with the technical problem of petroleum.

Conservation

The greatest social problem inherent in the mining industry is that of proper utilization of the supply which nature offers, since it can never be replaced. Conservation is the name given to the movement which calls for less waste and more careful planning in the use of natural resources. The movement was given publicity by Theodore Roosevelt when President, particularly as related to forests, which were being exhausted without replacement. Since then, however, the idea of conservation has spread to other resources which are nearing depletion, especially coal and petroleum.

Conservation may be secured in at least four ways.

1. Elimination of waste in production. This is largely a technical problem. An example of waste in production would be

the abandonment of a not completely exhausted mine. In petroleum, the waste is tremendous. The United States Bureau of Mines believes that only from 10 to 20 per cent of the oil underground is now recovered. In addition, 20 per cent of the gasoline content of the crude oil is lost by evaporation before it is refined.[1]

2. Elimination of waste in consumption. Engineers maintain that only about one-third of the potential energy of coal is caught in the modern furnace. This can be avoided by better machinery. Fifteen per cent of the country's gasoline consumption could be saved by better carburetor adjustment on automobiles.[1]
3. Substitution. Commodities are made to satisfy various wants. In the satisfaction of some of these wants it may be possible to substitute some other commodity, thereby preserving that which is more precious, for example, the use of hydro-electric power instead of coal for railroads or the use of cement for telegraph poles.
4. Replacement. This method of conserva-

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[1] Pogue, Joseph E., Economics of Petroleum. New York, 1921.

tion cannot be used in mining but could be effective with other resources. Timber is an example. At first no care was taken to replace the cut timber. Cut land was burned over and no new trees were set in. As a result timber has become increasingly scarce. More recently, we have begun to show signs of prudence. Young timber is preserved and forests have become a replaceable asset rather than one disappearing with consumption, but our system of taxation discourages forestry. The same process has been applied in the fishing industry. The United States Bureau of Fisheries at present has an output of approximately five billion fish-eggs, fry and fingerlings a year.

Our own generation will benefit by the work of the fish hatcheries, but the benefits of conservation are not always so directly discernible. Nor are the methods always so simple. In many cases, conservation will be employed only to the degree that we feel our responsibility to future generations. The next generation is sure to suffer from our careless and prodigal exploitation of the oil supply. On the other hand, substitutes may be found at the time which will serve as well. Generally, conservation costs more than it brings to us, ourselves, in return. The advantages will come to those who come after us.

Our economic system does provide one force for conservation, one which operates slowly and sometimes belatedly. It is inherent in the price system. As any product becomes scarce its market price tends to rise, thus bringing about less waste and more careful use. Such relief is usually too late. The real time to conserve is when there is still a plentiful supply. If the saving of our forests had been dependent upon the rise in price of lumber it would have been too late. Forests must be planned thirty years ahead. Conservation must be a long-time policy.

Power

The position occupied by fuels in the mining industry shows how important is the problem of power. One expert is so convinced that it is the pivotal point in our system that he writes:

> "The success or failure in mastering power production determines the future of society, the rise and fall of nations, the form, order and ideals of our relations."[1]

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[1] Polakov, Walter N., Mastering Power Production. New York, 192

The greatest sources of power in the United States at present are coal and the products of petroleum, chiefly gasoline and fuel oil. Compilations made by the United States Geological Survey on the production of electricity by public utility plants show that in 1924 two-thirds of the electricity created was generated from fuels of various kinds and one-third from water power. Since the supplies of coal and petroleum are limited while the demand for power is steadily and rapidly increasing, these fuels offer only a temporary solution and the problem of power will become more and more pressing as these resources are exhausted.

The total water power developed into electricity in the United States in 1924 created approximately 7,000,000 horsepower. It is estimated that it would be possible to extract 200,000,000 horsepower per year from the water resources of the United States, that 50,000,000 horsepower could be obtained without special provision for storage by means of dams, etc., and that 20,000,000 horsepower could be developed immediately. The authorities for these statistics go so far as to say that "the water power of the United States, converted to electrical energy, is more than capable of turning every industrial wheel and illuminating every street and building in the entire country."[1]

Although control over navigable rivers is vested in the State and Federal governments, the water rights of the smaller streams belong to the owners of land along the banks. Consequently, either directly through its authority or by using its power to condemn and take over any land for the public welfare, the Federal government or any state government is in a position to control and direct the water power development of its area. Although at first governments were so eager to have power utilized that they willingly gave permanent rights to whoever promised to erect dams and construct power plants, the tendency now is to grant franchises for a limited period only and to charge rentals. In general the problem of whether the government should enter this field or turn it over to private enterprise has been met in the United States by taking a middle course—private enterprise under public regulation. Many engineers believe that the happiest solution would be a "super-power" development, whereby the many power resources would be linked into a single system. That such a system might prove the most efficient is indicated by the tendency among private power concerns to develop on a large scale.

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[1] Gilbert, Chester G., and Pogue, Joseph E., The Energy Resources of the United States. (U. S. National Museum, Bulletin 102, Part 1.) Washington, 1919.

A further consideration in dealing with the problem of the proper utilization of water power is the high initial cost of such enterprises. No rivers have an even flow of water—even the Niagara varies about 35 per cent a year. In many cases therefore the construction of dams and reservoirs is necessary to maintain an even source of power throughout the year. Also the power plant itself requires much costly machinery, and the erection of cables and distributing wires, often extending several hundred miles from the plant, involves a large investment. Since the entire development must be completed before there can be any indication of the earning power of the project, it has often been difficult in the past to finance such ventures. But the success of many of the private enterprises in the last few years has produced a more favorable attitude among investors.

Although our water power resources cannot be exhausted as can our petroleum, nevertheless an ill-considered policy of granting to private interests monopolistic rights to exploit water power may be as wasteful from the public point of view as the reckless razing of timber. The most efficient use of our water power resources can be obtained only by adopting a long-time policy like that which must be employed with resources which more obviously need conservation.

See by all means the *Reports* of the American and British Coal Commissions. For entertainment, and value, read Hamilton and Wright's *The Case of Bituminous Coal.* Concerning petroleum, there are George Stocking's *The Oil Industry and the Competitive System* and the more technical and less provocative *The United States Oil Policy,* by John Ise. After reading any one of Stewart Edward White's tales of the lumbering camps, for example, *The Blazed Trail,* read *The Conservation of Natural Resources in the United States,* by Charles Van Hise.

CHAPTER VI

MANUFACTURING

THE products of farming, logging and mining are seldom ready for consumption. Their form must be changed before they can be used. Wheat must be ground into flour and flour baked into bread; cotton must be spun, the thread woven into cloth, and the cloth made into clothing; logs must be sawed, planed, cut, and joined together in various patterns; oil must be cleaned and refined. This process of changing the form of a raw material into a product ready for consumption is called manufacturing.

The Handicraft System

In colonial times each family did nearly all of its own manufacturing. The pioneer obtained little from outside; the spinning wheel and millstones were part of his household equipment. He was a handy-man and his wife a handy-woman. They had to make a small quantity of a great many things. Gradually, as men lived together in larger groups, it became possible for individuals to concentrate on special lines of activity. Each man turned to the thing he liked best, was best able to do, or found yielding him the largest reward. One was the village cobbler, another the baker, another the tailor and so on. Each produced in small quantities and with simple tools, and often with remarkable manual skill. Such a system of manufacture is called the handicraft system.

Under pressure of three great forces the handicraft system gave way to our present factory system. These forces were:

1. The extension of markets.
2. The application of specialization.
3. The introduction of power machinery.

Extension of Markets

As long as men could not trade outside their own small villages there was no incentive to produce in large quantities. A town with a population of fifty could not possibly demand more than one hundred or at most one hundred and fifty pairs of shoes a year. That was the limit at which the cobbler's output was fixed. Even if he had time to make more he could not sell them; his only market was the town. Before the cobbler or baker or cabinet-maker could find a larger market there had to be means of sending his goods to the distant buyer or bringing this distant buyer to his shop. Before there could be anything like a factory system, cheap transportation was necessary. How this need was met is told in the next chapter; suffice it now to say that transportation so developed during the nineteenth century that the limitations of the area under which the handicraft system struggled were removed. Delivery in distant markets was made possible and production was not limited to the needs of the immediate vicinity. Raw materials could be obtained in greater bulk. Not until then could large factories be built.

Although transportation has been most instrumental in extending markets, improved means of communication also have been of great influence. Rapid mail service and the telephone and telegraph have brought buyer and seller closer together and simplified their transactions, in fact have made many transactions possible. The tremendous increase in circulation of newspapers and magazines, enabling a producer to introduce his goods to millions of consumers, has had the same effect. The larger market necessitated and made possible the factory system.

Specialization

The second element in creating the factory system is the development of specialization, sometimes called division of labor. The two terms differ only in emphasis; in considering the process, one speaks of division of labor, in considering the worker, one uses specialization. Specialization was not unknown before the days of the factory system and the introduction of machinery. In England, there were trades and crafts of town workers organized in guilds at the time of the discovery of America. But as long as each man carries through a whole process himself he cannot increase his production to any large degree. There is no great advantage in bringing many workers together in one building if each works independently. Gradually, the long complicated processes came to be divided and subdivided. Now there is no single cobbler who begins with a piece of leather and makes a shoe all by himself; there are a hundred different steps in the making of a shoe and for each there is a different worker.

The efficiency of specialization lies in the fact that, in general, the same number of men, each working on a part of the process, can produce more than if they were working independently, each performing the whole. Each has a simpler job. It is therefore easier for him to learn, and constant repetition gives him greater skill. Each becomes an expert in one small field, whereas he might always be mediocre if required to perform every part of a complicated process himself.

Specialization has an interesting connection with the development of machinery. As the processes are broken up into parts the parts become simpler. The men who work at these dissected processes over and over gradually acquire a mechanical precision of movement. The invention of a machine to replace them is then much more readily suggested than when the process was a complicated whole.

Another form of specialization is local concentration of industries. Nearly 90 per cent of the collars and cuffs made in the United States come from Troy, New York; three-quarters of the ready-made clothes for women from New York City; and one-half the rubber tires from Akron, Ohio. Many cities are cities of one industry—cotton goods in Fall River and New Bedford, automobiles in Detroit, silk goods in Paterson, hardware in New Britain and leather gloves in Gloversville. A similar form of specialization is also seen within large cities. In New York City, for instance, the garment trade, fur trade, jewelry trade, and financial district are each concentrated in a certain section.

Geographical specialization is sometimes due to the fact that a city has some geographical characteristic peculiar to itself and favorable to a certain industry. It is said, for example, that Fall River has a degree of humidity especially favorable to the manufacture of high-grade cotton goods. But more often, if any reason is evident, it is the proximity of raw materials, the availability of a particular type of labor and the convenience of a single market. The tendency to concentrate geographically is breaking down in certain industries, particularly those in which New England dominated because of its early start, like boots and shoes, and cotton goods.

Not only workers and cities are specialized, but factories as well. One whole plant may produce shoe heels alone, another eyelets and a third another small part of a shoe. One factory, for instance, advertises that it makes dolls' voices!

Power Machinery

The third force which led to the development of the factory system is power machinery. The story of the evolution of machinery has already been told. But it is necessary to point out the relationship between power machinery and the factory system. In the first place, power can best be produced in large quantities. It is impossible for each worker to have a steam engine or an electric dynamo in his home. It is much more efficient to bring many workers and machines together and utilize power which comes from some single station. In the second place, power machinery is costly. The worker can seldom afford to buy it himself. In the handicraft system, in general, the capitalist, owner and worker were the same man. Because only a few individuals had amassed the sum necessary to buy machinery, the separation between owner and worker widened rapidly as machines became more complicated and more expensive.

In 1880 about one-third of all the manufacturing establishments reported in the Census used power machinery, consisting entirely of steam engines or water wheels. By 1900 nearly two-thirds had power machinery, and electric and gasoline motors began to appear. In 1919 82 per cent of all factories had power machinery, and electricity furnished nearly as much power as steam engines and turbines.

The Growth of the Factory System

After the American Revolution Alexander Hamilton examined the industrial conditions of the country. He found little factory production, but "a vast scene of household manufacturing which contributes more largely to the supply of the community than could be imagined. . . . It is computed in a number of districts that two-thirds, three-fourths and even four-fifths of all the clothing of the inhabitants is made by themselves."

Contrast this with the situation today. Every man is a specialist working in his particular line. He is dependent upon other persons for the production of most of his necessities. The factory system has developed to a point where, in 1919, it employed a greater part of the population than agriculture. A brief statistical summary of manufacturing in the United States during the last twenty years follows:

Year	*Number of Establishments*	*Wage-Earners (thousands)*	*Value of Products (millions of dollars)*	*Value Added*[a] *(millions of dollars)*
1899	207,514	4,713	11,407	4,831
1904	216,180	5,468	14,794	6,294
1909	268,491	6,615	20,672	8,529
1914	275,791	7,036	24,246	9,878
1919	290,105	9,096	62,418	25,042

Source: U. S. Bureau of the Census, *Census of Manufactures, 1919.* Washington, 1923.

[a] Value added by manufacturers is the total value of the products less the cost of the materials used.

This statistical table does not tell the whole story, by any means. Many of these factories are owned or operated by the same concern. Combinations exist among them. Nor do statistics picture the difference among these establishments. It makes them all seem alike. But they include perfume factories and steel mills, ice cream parlors and shipbuilding yards, dairies and coke ovens. Each industry has its own technical problems and its own peculiarities of customs and organization.

The total figures also hide the nature of the changes which are taking place. The most striking rates of increase have occurred in those industries making goods used primarily for recreation, or which represent radical changes in our living—automobiles, phonographs, electrical appliances, silk goods, cigarettes, and the like.

The Size of Establishments

Figures for manufacturing as a whole do not reveal the change which has taken place in the size of individual establishments. Although most of the factories are small, most of the workers are in the large plants. That is, 99 per cent of the factories employ less than 500 workers each, while the remaining one per cent employ 39.7 per cent of the wage earners. One-half the workers in manufacturing establishments are in factories employing 300 or more.

Although the construction of large plants has been rapid, it has not caused the passing of smaller establishments. It is explained rather by the fact that most of the industries of fairly recent origin, like those producing automobiles, rubber goods, beet sugar, etc., are such that they require large plants. It should be noted that in many of the older industries as well there has been a tendency toward larger units in establishments. Manufacturers expand their business because they desire to increase profits, satisfy personal pride or invest surplus funds which have already been earned. Many corporations like the Standard Oil Company have grown merely through turning back profits into the business for reinvestment.

Whether production on a large scale will prove profitable or not depends upon the conditions within the particular industry. In general, there are certain economies which are likely under large scale operation, though often they are not realized. Some of them are:

1. Economies in production. Most important are the savings which can be made by purchasing in large quantities, from the greater chance for specialization in a large plant, and from the utilizing of by-products which in a small plant would be insufficient in amount for practical use.

2. Economies in marketing. Savings can often be made by shipping in large quantities. Selling agencies can be maintained. Advertising probably will cost less per unit of product.
3. Economies in management. More efficient administration is possible; fixed charges, including such items as insurance, interest on bonds, and office expense will not increase as rapidly as output.
4. Economies in financial administration. Loans can be obtained at lower rates and greater financial resources will be available in case of strain.

Listing the economies of large scale production gives but one side of the problem. Certain types of industries are naturally large scale industries, others necessarily must have small shops. For example, industries where the product is large in size, such as steel ships, locomotives and ordnance, will naturally require establishments of large size. On the other hand, industries in which the material used is widely scattered and cannot be concentrated easily because of high transportation cost or rapid depreciation, will have small plants. Such industries include dairies, cider mills and sawmills. The tendency appears to be for the majority of industries to be gradually increasing the size of their shops, but there are some few, like the manufacture of leather belting, women's clothing, and paving materials, where plants are growing steadily smaller.

Marketing Problems

The change in manufacturing methods from the handicraft to the factory system has not come about without giving rise to serious problems. Each of the forces which has been instrumental in causing the change has also brought inherent difficulties.

The extension of the market has introduced problems with which the old hand-to-mouth production was never troubled.

Selling has become as vital a part of modern business as production itself. Out of selling on a large scale has grown a new industry, advertising, which is discussed in detail in a subsequent chapter.

The contact between producer and consumer is less direct and personal. The manufacturer is farther from his market and much more likely to misjudge it than was the handicraftsman.

The sale of goods at distant points involves two credit problems, the method of payment for goods and the financing of operations between the time of completion of products and payment by the buyer.

Distance makes the question of the quality of goods somewhat different from that when the craftsman and purchaser knew each other personally. The Pure Food Law and inspection by government officials of such commodities as meat, sugar and salt and the setting up of grades and standard measurements by the United States Bureau of Standards represent efforts of the government to intervene to guarantee quality.

The extension of the market makes the manufacturer dependent upon transportation. He must get his raw materials to his plant and be able to ship the finished product to the purchasers.

Specialization Problems

Specialization has two different effects. First, it requires a high degree of co-operation. Each person is performing one part of an entire process. He is dependent upon others to perform other parts. Each factory is dependent upon other factories for materials, tools and sometimes for a market for its products. Each industry is dependent upon other industries. A strike in one industry can have a disastrous effect on another, just as undermanning or inefficiency in one department of a factory can slow up every other department in the same factory.

The second effect of specialization on industry has been to change the nature of work. The close personal touch between employers and workers when both bent over the same bench has given place to a relationship in which many workers cannot even recognize the head of their company. The individual worker is a cog in a huge machine. He may be a skilled, smooth-running cog, but his skill is a simple one and his movement narrowly circumscribed. The craftsman spent from seven to ten years learning his trade. A new factory hand very often can learn enough in a few days to replace a worker who has been at his job for years. The result is that workers change jobs much more frequently than formerly. There has emerged the problem of what is called labor turnover. The labor turnover for any factory is computed by dividing the number of persons hired (or leaving) during the year by the average number on the pay-roll. It is by no means uncommon for an enterprise to have to hire in one year several times the average number on the pay-roll. In 1916 the turnover for 57 factories in Detroit was 252 per cent.[1] This is a heavy expense to many concerns, because it means training a new man for every one who leaves, with materials spoiled, machinery damaged, accidents, and time wasted in training.

Machinery Problems

The introduction of machinery has likewise brought in its train new and difficult problems. For the employer there is the necessity of deciding whether to substitute a machine for hand labor or not, and when. For him it is largely a matter of cost. When he invests in expensive machinery he takes the risk of having it superseded by some new and improved machine, thereby forcing him to scrap the old and make additional investment. A new element has entered into this problem in the present restriction on immigration. The reduction in the supply of unskilled labor, with a resulting rise in wages, may somewhat shift the point at which it is practical to introduce more labor-saving devices in manufacturing.

For the worker, the introduction of machinery is a more immediate and intimate problem. It deprives him of his job. Trade unions for this reason have often resisted the introduction of machinery. In England, in the early years of machine production, the hand-workers sometimes gave vent to their wrath by destroying the machines. In more recent times the coopers, plate printers, cutters and men of other trades have tried to obstruct the entrance of the machine. In many cases, there is no doubt that the workers in a trade suffer. But in others they may benefit after the original readjustment. The International Typographical Union is such an example. By permitting its members to work on linotype machines at a high scale of wages it has benefited printers greatly, for the introduction of the machine resulted in a tremendous expansion of the industry, following on the lowering of the cost of production.

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[1] U. S. Bureau of Labor Statistics, Bulletin 229.

Work has also been made more hazardous by the machine. In 1924, according to the Commissioner of the United States Bureau of Labor Statistics, probably more than 21,000 persons were killed and non-fatal injuries probably numbered about 2,500,000. Various legislative measures have been taken to prevent or lessen the frequency of accidents, such as the compulsory use of rock dust in coal mines to prevent explosions, and the enforced use of safety appliances on machines.

Until very recently the financial burden resulting from accidents fell in the main upon the workers themselves. At present, through the legislation of nearly all the states, as well as the Federal government, workmen's compensation is provided and the industry is forced to accept full responsibility. Even though the worker may have been entirely to blame, he will still receive compensation. State laws differ widely but in general the employer is required to carry accident insurance policies for his workers, either in a state fund or with a private company.

The histories of many different manufacturing industries are told in the *1900 Census of Manufactures,* one of the best censuses ever taken. A general book on manufacturing is Malcolm Keir's *Manufacturing Industry in America.* An excellent organization of census material is Day and Thomas' *Growth of Manufacture,* a Census Monograph. For a discussion of the size of establishments, see W. L. Thorp's *Integration of Industrial Operation* in the same series. Looking backwards, one must note Barbara and John Hammond's *The Town Labourer,* and read the life of *Robert Owen,* by G. D. H. Cole. See the books by Whiting Williams and Cornelia Straton Parker, and the Report of the Industrial Commission for illuminating incident and description of manufacturing conditions.

CHAPTER VII

TRANSPORTATION

NO PHASE of the modern economic system has been more indispensable to its development than rapid transportation. Only a century ago the fastest travel was by horseback. Messages could go no faster than the men who carried them. Today we talk with ease across the country, and airplanes carry letters across the continent in less than two days. Without that change our economic system would not and could not be what it is.

The Development of Transportation

Transportation includes not only the movement of persons and goods from one place to another, but also communication, which is the transportation of speech and thought. The means by which this is accomplished are various: roads, waterways, canals, postal service, telephone, telegraph, wireless, railroads, automobile and airplane, bonfires or cannon placed in relays to spread information of some special event, semaphore arms placed on high hills and set in different patterns to represent different letters, and heliographs, which are instruments for reflecting the rays of the sun, now chiefly used in military signalling. A brief historical summary of the development of transportation and communication follows:

1807	Fulton's steamboat.
1825	Opening of Erie Canal.
1829	Stephenson's locomotive.
1835	Morse's telegraph.
1840	Postage stamps.
1854	Asphalt paving (Paris).
1863	Free postal delivery.
1865	Atlantic cable.
1866	Bicycle.
1875	Bell's telephone.
1877	Edison's phonograph.
1886	Special delivery letters.
1887	City electric street cars (Richmond, Virginia).
1895	Automobile patented.
1896	Marconi's wireless telegraph.
1897	Rural free delivery.
1903	Airplanes—Farman and Wright.
1912	Parcel post.
1920	Airplane mail service.
1921	Wireless telephone.

The Function of Transportation

The most valuable economic service directly performed by transportation and communication facilities is the enlargement of markets. Before these inventions were made, men had to sell their goods to the people whom they met in the market place and in order to buy they had to go searching for those possessing the commodities they desired. Each market was therefore small in area and communication was not easy even within its boundaries. The Indian who wanted to trade a fur had to go about asking people to trade. To-day we advertise in the local newspapers or even in newspapers all over the country. The cobbler a hundred years ago made shoes for those who came to his shop. Now the shoe manufacturer sells shoes everywhere in the world. Transportation has made it possible to find and deal with purchaser and seller far more easily than heretofore.

Effects of Enlarged Markets

Why is it important that the market be extended? There are at least five results which must be considered:

1. Goods are more widely and equally distributed. It once was true that one part of the United States could suffer from lack of food while elsewhere there was plenty. In China, where modern transportation has been introduced but slowly, the year 1920 saw wheat selling for two dollars a bushel in one province and as low as ten cents in another.
2. More kinds of goods can be had. Early foreign trade dealt in luxuries only, like

silks, spices, perfumes and jewelry. As methods of transportation improved and rates of carriage declined, comforts could be shipped without adding exorbitantly to price. The steam engine has made possible the shipment of the necessities of life.

3. Population may be concentrated. There could be no large cities without roads, railways and waterways over which food and other necessities may be brought.
4. Production may be on a larger scale. In order to produce in large quantities a manufacturer must be able to reach a wide market. If he cannot extend beyond his own locality his activity will be limited to the amount that locality can produce and consume.
5. Geographical specialization is possible.[1] Not having to be self-sustaining, a locality may use its advantages of situation or resource to produce that which yields it the largest return, as Troy concentrates on collars and Pittsburgh on iron and steel.

Since the world war there has been a definite swing in public opinion to the view that govern-

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[1] See p. 80.

Govern-
Industry

ment should interfere with industry as little as possible, that industry will prove most efficient when unhampered by government. This principle and practice has been one source of popular appeal in the Coolidge administration. As a matter of fact, our governments, both Federal and state, interfere but little with the activities of business men. To be sure, licenses are required in some forms of business, like the selling of food or operating of drug stores; and in some occupations, like the practice of medicine and law, examinations must be passed. Also general regulations are provided in such measures as the Pure Food Act, limitation of hours of labor for women, workmen's compensation, and anti-trust laws. But in the main the business man is free to do as he wishes.

In certain branches of the transportation industry, government interference has been more extensive. Interference goes as far as the regulation of behavior, rates, and profits, for the industries known as public utilities. In some few cases various branches of the government even own and operate enterprises. These include the post office, government printing office, postal savings banks, national parks, canals, roads, dams and reservoirs, fire and police protection, water supply, irrigation and drainage projects, schools, libraries and many municipal lighting, power and street railway projects.

The extent of government ownership is much greater abroad than in the United States. In all, more than fifty countries own railroad systems, and telephone and telegraph services are government enterprises in practically all countries save the United States and Brazil. Shipping and insurance are also customary government activities. Some of the other types of industrial enterprise recently operated or owned by governments are given below:

Coal mines—New Zealand, Austria, Germany, Hungary, Sweden, Russia, Holland, Serbia.
Silver mines—Sweden, Russia.
Tin mines—Dutch East Indies.
Emerald mines—Colombia.
Electric power—Switzerland, Norway, Sweden, Italy, Japan, Canada.
Salt—Germany, Switzerland, Japan, Rumania, Turkey, China.
Housing—England, Germany, Italy, France, Argentina, Australia.
Tobacco—France, Italy, Austria, Czecho-Slovakia, Spain, Sweden, Holland, Japan.

Alcohol—Russia, Switzerland.

Saccharine—Austria.

Foreign municipalities are also more active than the cities of the United States. For example, the city of Glasgow operates street car lines, gas and electric lighting, water supply, docks and harbor, public markets and slaughter houses, laundries and bathing establishments, ferries and parks and bowling greens and golf courses, as well as roads, hospitals, schools, libraries, museums, etc.

For the most part, reasons for the entrance of the state into enterprises of this character are two: first, the industry may be a source of considerable revenue and therefore be taken over by the government to help defray general administrative expenses; second, private ownership may not have proved itself able or willing to carry out the project to the best interests of the population.

Public Utilities

Certain industries which touch the welfare of the whole population intimately have been held to be public utilities. In this classification are railroads, street car lines, gas and electric companies, express companies, telegraph and telephone companies and petroleum pipe lines. The right of the government to regulate such enterprises has been recognized in law. They occupy a status half way between government ownership and private control.

In all these industries, a large degree of monopoly operation is unavoidable. Every small town which is on one railway line is an area of monopoly for that railway. Yet it would be uneconomical and foolish to insist that two railways run into every town. Furthermore, a monopoly of transportation rights is most often the more desirable form. There is waste in having two telephone companies in one city because there must be extensive duplication of plant, lines, and calls. There is also inconvenience, because the person one wishes to call is inevitably a subscriber of the other company. It is because such monopoly operation is largely unavoidable and wholly desirable that the government, realizing from sad experience that such monopolies may easily take advantage of an unprotected public, has developed the principles of public regulation.

The regulation of public utilities is undertaken by the Federal government in the case of those engaged in interstate commerce; otherwise, by the various state governments. In most cases public utility companies must obtain permission to use or pass through government land or public thoroughfares. Such permission is usually granted for a limited period and is called a *franchise*. Furthermore, the floating of stock issues and fixing of rates are generally controlled or supervised by a special government agency. The Federal government has special commissions and most states have public utility or public service commissions, charged with determining that the rates charged are "reasonable".

In an economic system where industries are so completely dependent upon each other, it is difficult to understand why the "public interest" is greater in express companies than in coal mines. It is conceivable that the method of dealing with public utilities now employed may be extended to other vital industries in the future.

Railroads

Of all the public utilities the most important are the railroads. Employing nearly 2,000,000 workers and owning nearly $20,000,000,000 worth of roadbed and equipment, the railroads are at the very heart of the present economic system—an industry built up about the use of a single machine. In the United States the railroads were at first quite free from government interference. The states were eager to have railroads built and encouraged them in every way. State governments gave assistance by purchasing railroad stocks and bonds. Furthermore, between 1850 and 1871 the Federal and state governments gave to railroads 242,000 square miles of land. Such encouragement was doubtless responsible to a large degree for the rapidity of railroad development in the United States. In fact, more than one-third of the railways in the world are in this country alone. But evils appeared. The railroads had different rates for different shippers, and they gave rebates. Oftentimes a rate for a long-distance haul in territory where there was a competing railroad would be lower than the rate for a much shorter distance in territory in which there was no competition. There were financial scandals and rate wars. The public turned from encouragement to antagonism.

Interstate Commerce Commission

In 1887 the Interstate Commerce Commission was established. It was supposedly given power to regulate interstate transportation, but this power was gradually shorn away by decisions of the Supreme Court. In 1906 and 1910 laws were passed re-establishing its powers, the chief of which are: the determination of rates, the prevention of discrimination, and the requirement of uniform methods of accounting. The whole legal procedure is so organized as to make the burden of proof rest on the transportation company. The Commission has authority over pipe lines, sleeping car companies, express companies, and railroads, including switching companies. It has control of practically all the railroads in the country, for the term "interstate commerce" means more than merely railroads operating in two states—it includes "railroads which ship products going to other states".

Rate Regulation

The Interstate Commerce Commission is given power to fix "reasonable rates". But the determination of such rates is not easy. It is agreed that railroad rates are reasonable if they yield a "fair return" on the "fair value" of railroad property, but those terms are not easily defined. A fair return must be stated in per cent, but shall it be four or six or eight per cent? And should stockholders receive such dividends regardless of the efficiency of the railroad or the condition under which it operates? The Transportation Act of 1920 fixed the "fair" rate of return at 5½ per cent, since increased by the Interstate Commerce Commission to 5¾ per cent.

The determination of the "fair value" of the railroads is a still more difficult problem. The fair value might be taken as the original cost, or the present estimated market value, or the present cost of reconstruction, or the cost of replacement in its present condition, or the cost of construction with an allowance for depreciation. Each of these methods would give a different "value" for the railroad. Since 1913 the Interstate Commerce Commission has been making a careful inventory of railroad property. That inventory, corrected for additions and losses of equipment and price changes since 1913, will be used on a basis for arriving at the fair value of railroads.

But the "fair return" on the "fair value" only states the total which the railroads should earn. This remains to be divided among the various kinds of shipments. The schedule of rates must include passenger and freight tariffs, and the freight tariff must be subdivided into thousands of different rates according to the class of commodity carried and the distance. Nor can the obvious guide, the relative cost of shipments, be of much assistance, for it, too, is difficult to determine. Many expenses are joint costs; that is, they enter into the transportation of many different articles and cannot be apportioned among them except by guess-work. For example, passenger and freight trains use the same roadbed. So many different considerations enter into specific rates.

Railroad Consolidation

Prior to 1920 the Federal government viewed any attempts at railroad consolidation with disfavor. In fact, several such mergers were broken up by government decree. But this policy was reversed in the Transportation Act of 1920. The Interstate Commerce Commission was ordered to prepare a plan for the consolidation of the railroads of the country into a limited number of systems. But competition was to be preserved, existing routes were not to be disturbed, and financial aspects of the reorganization were to be given careful consideration. After such a plan had been prepared it was to be revised in the light of public hearings, and then put into operation. Thereafter no mergers would be permitted unless they conformed to the general plan. Although the first step—the drawing of the original plan—has been completed, no further action has been taken.

The tendency toward consolidation has been going on among the railroads themselves for some time, either directly or by such means as long-term leases and stock ownership. Since rates have been definitely fixed the chief method of increasing profits is to decrease costs. Consolidation of railroads is one way to cut costs, for it leads to better co-ordination, less cross-hauling, smaller overhead expenses, and better credit standing. On the basis of reports from five of the seven railroad regions, W. G. McAdoo, Director General of Railroads during the war, estimated that the savings for the year 1917-18 directly traceable to consolidation totalled more than $85,000,000. For the whole country, it would have reached nearly $125,000,000. This saving came from unification of terminals, elimination of duplicated passenger service, reduction in organization, elimination of cross-hauling of freight and minor economies.

Consolidation which is permitted to "just grow" will be based on bargaining and scheming with an eye toward obtaining advantages over competitors. Weak roads will be roughly dealt with and financial control vested in the strong. Consolidations should be based on a far-seeing plan and consideration of the entire transportation problem rather than the financial interests of a few strong roads.

The best introduction to the problems of transportation is to look at the pictures in Seymour Dunbar's expensive, four-volume *History of Travel in America.* Also see the movie, *The Iron Horse.* For general books, see Vanderblue and Burgess, *Railroads,* and the many volumes written by William Z. Ripley. Finally, see *Railroad Union-Management Co-operation,* by Otto S. Beyer, Jr., for an analysis of present conditions.

PART THREE

THE INSTITUTION OF THE PRICE SYSTEM

CHAPTER VIII

THE FUNCTION OF EXCHANGE

WE HAVE thus far been discussing the problems of production. Since production is largely a technical matter, its problems are set by man's knowledge and his skill, by natural forces, and by the materials provided by nature. There is no reason for believing that in a communist or socialist state the actual methods of production would vary widely from those of our own society. There would still be factories, coal mines, and steam engines. There would be the same old processes.

After a commodity is produced, however, the problems connected with it take on a different character. They are no longer entangled with technological methods but depend entirely on social organization. With the extensive specialization of our society, the producer and consumer are nearly always different individuals. The determination of the consumer and the machinery for transferring the goods from producer to consumer must be managed by human institutions. Commodities may be exchanged and distributed according to any scheme which society selects. That the present scheme is not unalterable was demonstrated during the last war, when the American government fixed prices and limited the sale of many commodities, while foreign governments went further and instituted compulsory rationing of foodstuffs.

Exchange Value

Many goods are free, but it is not with them that economics concerns itself. Under certain conditions, goods acquire exchange value. Exchange value is the ability to command another good in exchange. When the exchange value of a commodity or service is expressed in terms of money, the amount of money which it equals is called the price of the commodity or service. The use of money as the measuring rod for all commodities makes it possible to compare the exchange values of all commodities easily. There are many different kinds of prices,—wages and salaries as the price of labor; rent as the price for the use of land and buildings; interest as the price for borrowing money; fares as the price for transportation; fees as the price of professional service, and many other special terms.

The Role of Prices

The present method of exchange is built up around this vast system of money prices. In a certain sense these money prices are the very heart of our economic organization. We decide whether to buy this or that according to the price. We go to the opera seldom, not because we do not enjoy it but because the price forbids. The manufacturer decides what to make and how much according to the prices he must pay for materials and labor and the price he expects to receive for his product. Prices for goods, prices for labor, prices for loans, prices for services, prices for machinery, prices for land, prices for ownership—they are all part of the price system and as such they determine and in large part direct our activity.

Changes in the relationship between prices mean material riches or poverty to one group of the population or another. Agricultural prices are significant to the farmer only as compared with prices of manufactured goods. The worker is interested in the amount of money in his pay envelope, but he should be more concerned whether it is increasing as rapidly as the cost of living. Likewise persons with fixed incomes—pensioners or bondholders—will suffer from a rise in commodity prices, for then their incomes will buy less goods.

The Use of Money

This enormous price machinery could not exist except for money. Money may be defined as a generally accepted medium of exchange.[1] Unless there is such a medium, business must be carried on by direct trading, or barter, as it is called; and barter presupposes the simplest form of existence. As soon as men specialize and are therefore forced to exchange their wares with other specialists, the use of money becomes essential. Imagine the confusion if all business had to be done directly in commodities, if we had to trade one thing directly for another. For we sell at one time and buy at another. We sell at one place and buy at another. We sell an object at one price and buy something else at another price. Such exchanges cannot be made without some form of money. The use of money has become a social habit and thus a social institution.

In recent years, we have developed a short-cut for doing much of our "money work". This is the use of bank accounts. Even so, the transaction by check goes through only because the check represents a money payment and can be easily converted into money at the bank teller's window. In this country today nearly nine-tenths of all money payments are made by check.

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[1] Money is discussed in more detail in Chapter III of Part III.

Consequences of Money Use

The use of money has divided the exchange of goods into two separate exchanges. We do not work eight hours for a new hat; we work eight hours for five dollars and then spend the five dollars for a new hat. The net result may be the same, but the introduction of money has made possible the great number of varied, unequal, and dissimilar exchanges which we make today and could not make otherwise.

The goal toward which we strive is no longer the assembling of enormous flocks or the filling of granaries. We now strive to accumulate money. This has affected our general scale of values, and we measure men by the money they earn and the money they have stored away.

It follows from the use of money as the means of exchange that money will also be used as the standard of measurement. In order that exchanges may be made easily it is essential that commodities should all be valued by some single measure. Money is the common measuring stick of such diverse things as the use of a house, a dozen bananas and the privilege of listening to a grand opera.

These two processes, simple as they seem—using money as a standard of value and as a medium of exchange—underlie all our complicated transfer of goods and services. The nature of money and money prices is the subject of the next three chapters.

For a discussion of the significance of the use of money prices, see the section by Wesley C. Mitchell in *Stabilization of Business,* edited by Lionel Edie. For a less temperate discussion, see *The Engineers and the Price System,* by Thorstein Veblen. Furthermore, watch for the results of an investigation now in process of completion by Frederick C. Mills called *The Behavior of Prices,* which will be published by the National Bureau of Economic Research. For a lucid explanation of index numbers, so often used in connection with prices, see Bureau of Labor Statistics, Bulletin No. 284, entitled *Wholesale Price Index Numbers,* by Wesley C. Mitchell.

CHAPTER IX

MARKETS AND PRICES

PRICES are fixed in markets. Markets vary in size and extent of organization. We speak of the world market for wheat because some circumstance which affects the price of wheat in one locality affects it at the same time in every place where grain is exchanged,—a serious drought in Argentina during the wheat growing season affects the price of wheat in London and Rome. A commodity like milk, however, has a local market, since the factors that determine the price in any given community are local and affect at most only that region.

Markets

Markets differ also in degree of organization. In the large economic centers, the purchase and sale of wheat is carried on in special rooms, where buyers and sellers come together at definite hours and buy or sell according to an established form of procedure. Such organization is found in stock exchanges and the exchanges for various staple products, such as sugar, coffee, cocoa, rubber and produce. Most markets, however, are not formally organized.

Law of Supply and Demand

The approach to the problem of price determination hallowed by long usage is to assume a "perfect" market. A perfect market is one in which all buyers and sellers are assumed to act rationally and tirelessly from economic motives only, all buyers and sellers are assumed to have complete knowledge of the condition of the market and the offerings of all other buyers and sellers, and free competition is assumed to exist. It can be easily shown that in such a market at a particular moment of time:

1. *The demand varies in an opposite direction from the price.* That is, as the price rises, the effective demand decreases, and as the price falls, the effective demand increases. This is true because every buyer who will buy at a high price will gladly buy at a lower price, while additional buyers will enter the market at a lower price.

2. *The supply varies directly with the price.* That is, as the price rises, the supply increases, and as the price falls, the supply decreases. This is true because every seller who will sell at a low price will gladly sell at a higher price, while additional sellers will enter at the high price.

3. *The price will tend to be fixed at the point where demand and supply are equal.* At any other point, since supply and demand are not equal, there will be either excess buyers or sellers in the market. Since all are willing to trade at that price but cannot find sellers or buyers, they will bid the price up or down eliminating the excess bidders until equality is reached.

It can also be shown that *an actual increase on the demand side of the equilibrium causes the price to rise, while an advance in supply causes it to fall.*

This analysis requires further discussion, for two reasons: first, it assumes conditions which are at best only partially true; second, it explains prices in terms of supply and demand, which themselves require closer examination.

The "Perfect Economic Man"

The first assumption is that the buyers and sellers in this market will act "without passion, prejudice or caprice" in the pursuit of economic ends—to make a profit or to get as much for as little as possible. The "perfect economic man" is fortunately a rare being, yet there is no denying that the business man behaves to a large extent in this fashion. But as one moves further away from the large impersonal business unit, motives other than the economic enter into price fixing. Friendship, pity, laziness, the pursuit of prestige and many other motives may permit bargaining upon which a perfect economic man would frown. Men accept jobs at wages lower than they could get elsewhere, because they feel that the difference is made up by other advantages,—they prefer life in the country, they desire more leisure, they like the employer they have, they enjoy their work or they have greater social esteem where they are.

The force of social custom is another non-economic power which must be noted. Many prices remain unchanged for long periods, fixed by the weight of custom, although fresh bargaining, free of uneconomic restraints, might set the prices at another point. During the world war nearly all of these traditional prices passed, although even under that shock there were some exceptions, like the notary public's fee, the subscription rate of certain magazines, and the interest paid by savings banks. An examination of wholesale prices for about 250 commodities in the 25 years prior to 1915 shows that, in more than one-eighth of the cases, there was no change in the commodity price from one year to the next. Furthermore, many prices, such as rents, salaries, and wages, are far more stable than commodity prices.

"Complete Knowl-edge"

The second assumption is that the buyers and sellers have complete knowledge of the market and of the offerings of other buyers and sellers. These conditions are best realized in highly organized markets. In a stock exchange news is continually reported over the ticker and prices bid and asked are posted where all may find them. But even this is far short of perfect knowledge. Although the ticker provides "knowledge" in large amounts, it is not complete, and is often inaccurate. Rumors may send shares up and down as fast as correct information. In less organized markets the assumption is even less warranted. We know neither what goods are being offered nor what offers are being made for them. We buy according to newspaper advertisements, notices, store windows, the reports of friends, a salesman's statement and our former experience in shopping at certain stores. While means of communication have greatly increased the knowledge of buyers and sellers about market conditions, it must also be remembered that the forces within the markets and the number of buyers and sellers have also increased, bringing new competition. We all buy so many different articles for our personal use that we are physically unable to bargain as cleverly as the business man, who specializes in a small number of commodities.

"Perfect Competition"

The third assumption is that there is perfect competition. But in many markets freedom of competition is restricted in one of three ways: by public authority, by long-time contracts, or by combination or co-operation among buyers or sellers.

Public authority intervenes to limit competition in such prices as railroad fares, express rates, street car fares, water rates, telegraph and telephone rates and light and power charges. Government authority is sometimes exerted to set limits beyond which prices may not go. The fixing of a minimum wage, a maximum rate of interest and, in some communities, restrictions on house rents are examples of this power.

In many industries prices are fixed by contracts, governing usually for one year, sometimes longer. In the steel and coal industries many concerns sell their whole year's product to some purchaser at a price to hold throughout the year. Likewise in the labor field it is becoming more and more customary to make agreements fixing wages for one, two or even more years—the latest wage contract in the anthracite coal industry is for four and one-half years. In such a situation the laws of price determination can operate only at intervals.

Where there is co-operation among dealers, they enter the market as one person. When the sellers have a monopoly, they may fix any price they desire, presumably that which will yield the most profit, a price generally higher than would be fixed in a competitive market. It is not, however, at the highest point possible; if it were, enough buyers would drop out of the market to cut the profits of the monopoly—under certain conditions people will refrain from buying all but elemental necessities if the price is prohibitive. When the monopoly is one of buyers, it gains most by making a separate agreement with each seller, driving the price as low as each can be made to accept and playing one against the other. In such a case, which is very rare, no general price would exist.

"Supply" and "Demand

There is, then, good reason for believing that the law of supply and demand is neither a complete nor an accurate explanation of the determination of prices. It is probably true that among our many kinds of prices and markets the law of supply and demand comes nearer to a general explanation of price determination when competitive conditions obtain than any other brief and general statement. Furthermore, it often cannot explain small price movements, but is generally more effective when basic changes are felt in supply and demand. A very small cotton crop or a restricted immigration of unskilled laborers is sure to be reflected in rising prices. But even under the most favorable conditions the law of supply and demand is far from being a final explanation of any particular set of prices. It refers the inquirer to two sets of forces, demand and supply, both of which are blanket terms. The elements which enter into and define them are numerous, and not a few lie outside the field of economics. Supply is in many cases, particularly in agriculture, determined by natural forces, while demand is more a matter of individual and social psychology. The student of prices must often times ask for help in defining these terms from experts in other fields.

The System of Prices

It may seem at first that no relationship exists between the many different prices. As a matter of fact, they are knit together in an intricate system. In the first place, the threat of substitution prevents any single price from getting far away from its customary level. This is particularly true when more than one commodity serves the same purpose. Various foods compete with each other and force readjustments of price. Gas and electricity, cotton and wool, street cars and busses, belts and suspenders are all competing commodities. Even objects satisfying different wants may compete, for one often must decide between quite different alternatives—a suit of clothes or a set of Dickens. Decision is affected considerably by the relative price of the two.

In the second place, prices are related through the influence of cost. The retailer is continually influenced by the wholesale price, the wholesaler by the manufacturer's price, and the manufacturer by the price of raw materials. There is a further link in the fact that the same kind of raw material, being used in more than one product, influences the price of various products. Since leather is the chief article used in making both shoes and suit-cases, their prices are similarly affected by changes in the price of leather. The costs of labor, land and loans similarly enter into all forms of industry, and changes in those basic costs affect all industry in the same direction, if not to the same degree. This complexity of relationship, merely indicated here, together with changes in the technique of production and variation in demand arising from such causes as fashion, results in continual adjustment and readjustment within our loosely but definitely inter-related price system.

Surplus and Unearned Increment

In any system where prices tend to be fixed at one level throughout a market it is inevitable that certain purchasers obtain goods at prices lower than they are willing to pay. They are able and willing to pay more but, of course, will pay no more than the market price. This gain on the part of most of the buyers is called "consumer's surplus". On the other hand, many of the sellers would be willing to sell at much lower prices if necessary, but actually sell at the market price. This gain on the part of many sellers is called "producer's surplus".

Recent investigations of several industries, notably the coal industry, have indicated that operators produce at costs that vary widely. In 1918, among 208 operators of coal mines in Illinois, the cost per ton mined varied from 95 cents per ton to $4.25. Even ruling out the extreme cases, by taking away 5 per cent at each end of the scale, the remaining 90 per cent reported a variation of a dollar per ton.[1] But the market price is fixed by factors which dominate the entire industry, and all operators sell their output at about the same price.

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[1] U. S. Federal Trade Commission, Coal, No. 3. Washington, 1920.

Therefore, when each producer measures his costs against that price, some may find they operate at a loss but more often there is a producer's surplus. The same may happen in the case of two workers of unequal ability working for the same wage. If the wage represents the value of the better man, then the less skillful one receives a surplus. If it is based on the value of the less skillful one, then the employer obtains more than he pays for from the more skillful one—a consumer's surplus. Such inequalities are bound to arise in any price system in which single prices tend to predominate.

"Unearned increment" is caused by the fact that the laws of private property permit an owner to reap the benefits of any change in the value of the object which he owns. Suppose a man to own a plot of land. The community for one reason or another shifts its business center so that his land becomes immensely valuable. In this case, assuming that he did not buy the land with any expectation that there would be such a shift in the town's center, the increase in value is due to the town, yet the benefit is the individual's. Again, a man may have organized a business, expecting to make a small profit by virtue of his skill. Fashion may shift so that his product is in great demand and he reaps an enormous profit. There are many other illustrations of changes in value, both up and down, which must be laid at the door of society but in which the gain or loss is an individual's.

Price Levels

One extraordinary feature of the price system is that not only is there continual change in the prices of particular commodities and services, but there is also an underlying movement up or down of all prices. We refer to these general changes as movements in the price level. We can all remember the way in which prices rose during the last war. Much the same thing happened during the War of 1812 and the Civil War. After the Civil War, prices fell until the nineties, then rose, gradually at first, but extremely rapidly during the war. Wholesale commodity prices are now (1927) about 45 per cent above their level in 1913.

There are few periods when the price level is not changing. This movement is often related to the condition of business, prices usually tending to rise during periods of great business activity, and fall during periods of depression. The depressions of 1908 and 1911, for instance, are shown by little dents in the rising trend.

The causes which lie behind these changes in price level provide one of the most difficult prob-

Causes of Changes in Price Level

lems in economics. We can only note certain of the more important factors. A change in the level of prices may be caused by an increase or decrease in the amount of money in circulation. Money is exchanged for goods. If there is an increase in the amount of money, but no increase in the amount of goods, then the price of goods will go up, and vice versa. An excellent example of the close relationship between an increase in the amount of money in circulation, and a rise of prices, is the recent price history of Germany.

The same result may come from increasing the credit which banks extend. Nowadays, most business is done by check, and extending loans is much like issuing new currency. It means, in fact, that people have more dollars with which they can purchase. During the Civil War, the high price level paralleled a large increase in currency. During the world war, the price rise in the United States was accompanied rather by an increase in the extension of credit.

A further important factor in the shifting of the level of prices is that price changes are apt to be cumulative. Some incident, such as a prolonged coal strike, may cause a rise in the price of coal. The higher cost of coal increases the expenses in many factories. The prices of their products rise, and the price level moves upward somewhat. But some of these factories may produce explosives, machinery, and other articles which are used in coal mines. Consequently, the expense of coal mining is in turn increased, and the price of coal may tend to rise still further. This in turn affects again all industries using coal. It is not strange that the level of prices is moving continually, and sometimes very rapidly.

Results of Changes in Price Levels

If all prices moved alike, we should need to be little concerned over the constantly moving price level. We could look at the paper in the morning, see that prices had doubled over night, and then multiply all our calculations by two. But unfortunately, this is not the way in which these changes come about. Certain prices fluctuate widely, others seldom change. Some prices are able to move quickly, others are fixed by contracts or require action by a Commission, and can only be adjusted after long intervals. The wide differences between the prices of commodities is shown by the fact that, after the war, when coke had gone to 537 per cent of its pre-war level, and sugar to 498 per cent, copper was but 45 per cent and zinc 66 per cent above their pre-war levels.

This irregularity is present among groups of commodities as well as individual products. The following figures are the percentages by which the cost of living, as reported by the U. S. Bureau of Labor Statistics, had increased in June, 1920, its highest point, over the level of 1913:

Food	119.0
Clothing	187.5
Housing	34.9
Fuel and light	71.9
House-furnishing goods	192.7
Miscellaneous	101.4
Total	116.5

The wide differences between these groups show how uneven the price rise really was, and, therefore, how certain sections of the community benefited, and others lost.

The group which suffers most from advances in the price level consists of persons with fixed incomes, depending for their living on insurance payments, pensions, annuities, or interest on bonds. They receive the same income regardless of what the price level may be. But a given number of dollars has quite a different purchasing power at one price level than at another. The widow, living on her husband's insurance, received less than half as much purchasing power in 1920 as in 1913.

In Germany, the enormous rise in prices caused all such fixed incomes to become practically worthless. A declining price level results conversely in benefit to those with fixed incomes.

Finally, changes in price level have an important influence on business conditions. When the general price level is rising, periods of prosperity tend to be longer, and of depression to be shorter, whereas a period of falling prices is apt to cause a predominance of depression. Periods of violent price change cause disorganization of ordinary business, which is entirely overshadowed by the activity of guessing what future price movements will be.

The classic discussion of the law of supply and demand can be found, with minor variations, in all standard economics texts,—see Taussig, Marshall, Seligman et al. For the operation of monoply prices, see various studies of monopolies, such as Eliot Jones, *The Anthracite Coal Combination,* and the reports of investigations made by the Bureau of Corporations, and later by the Federal Trade Commission. For the discussion of the fluctuating price level, no author has the standing of Irving Fisher, who is perhaps most explicit in *The Purchasing Power of Money.* For studies of the determination of particular prices, see such reports as H. B. Killough's, *What Makes the Price of Oats,* Department of Agriculture Bulletin No. 1351 and Willis and Byers, *Portland Cement Prices,* and see the criticisms offered by Fetter in the *American Economic Review,* December, 1924, and by Viner in the *Journal of Political Economy,* February, 1925. Elaborate studies of various prices during the war were made by the Price Section of the War Industries Board.

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CHAPTER X

MONEY

= accepted medium of exchange

MANY different commodities have been used as money—slaves, cattle, leather, furs, grain, salt, tobacco, shells, tea, metals, paper. For one reason or another most of these forms of money have proved unsatisfactory. Good money must be durable, easily divisible, convenient, uniform in quality, and quickly recognizable. In general, metal coins conform best to these requirements and, as national wealth has increased, copper, silver and gold have been utilized as money. But metal money is not always convenient, as one learns in parts of the South and West where change from a ten-dollar bill may include half a pound of silver dollars. Paper notes have therefore been substituted as tokens of money and in the United States today about six-sevenths of the money in circulation is paper.

Because money does not serve its purpose unless generally accepted, governments have undertaken the task of regulating the monetary system. The Constitution of the United States declares that

"The Congress shall have power to coin money, (and) regulate the value thereof". A government exercises this function by declaring its money to be "legal tender", which is in effect a decree that the money it endorses must be accepted by creditors in payment of debts. When the state banks in the United States issued currency which was deemed undesirable, the Federal government forced them to withdraw their notes by placing a 10 per cent annual tax on all such issues.

Kinds of Money

The following statement of the United States Treasury Department on money in circulation on January 1, 1927, shows the kinds and amount of money in this country—figures are in millions of dollars:

Kind of Money	*In Circulation*
Gold coin and bullion	423
Standard silver	52
Subsidiary silver	282
Gold certificates	1,092
Silver certificates	397
Treasury notes of 1890	1
United States notes	297
Federal Reserve notes	1,824
Federal Reserve bank notes	5
National bank notes	629
	5,001

The Treasury Department reports that there is 3,657 million of gold held in the Treasury and 422 million in addition in the Federal Reserve Banks.

The relative importance of the various kinds of money can be seen from this table. There are marked differences among them. The *metallic currency* includes the coins with which we are all more or less familiar—gold, silver, nickel, and copper, and, in addition, gold and silver bullion, as metal in the form of bars is called. About one-seventh of the currency in circulation is metallic. Although there is exactly one dollar's worth of gold in a gold dollar, the same is not true of a silver dollar. The mint "over-rates" silver, that is, it puts less silver into the dollar than one dollar can buy in the open market. *Gold and silver certificates* are paper, being in reality receipts for gold and silver which the government is holding in deposit. Since paper is more convenient for general use than metal, these certificates are issued and a corresponding amount of gold or silver is put into a vault as reserve. These reserves may not be used for any other purpose and must be given at any time in exchange for the certificates. The *United States Notes* are the remainder of special issues of paper money made during the Civil War. The *United States Treasury Notes of 1890* are small in amount and were issued to pay for silver which was placed in reserve against them.

The remaining forms of money are issued through the banking system rather than the United States Treasury. *Federal Reserve Bank Notes* and *National Bank Notes* are issued by Federal Reserve member banks and national banks. The issuing bank must hold an equal amount of certain United States bonds or certificates which carry the circulation privilege. The banks must also have a 5 per cent gold reserve against the notes. The circulation bonds bear interest at the rate of 2 per cent a year.

Federal Reserve Notes constitute the largest part of our currency. They are issued by the Federal Reserve Banks. They must have a security behind them of at least 40 per cent gold, the remaining 60 per cent being made up of "prime" commercial paper. The Federal Reserve notes make it possible to increase or decrease the money in circulation easily. This is very important, for the money requirements of the country fluctuate widely. In the fall, when crops are being moved, the demands for currency are especially heavy.

The greatest cause of fluctuation in money requirement is the frequent change in the level of prices. If, for example, all prices double, the amount of money required will also increase. Federal Reserve notes are more elastic than other kinds of currency because banks may "pyramid". They can lend currency, obtaining in return a promissory note. This note, or commercial paper, can be used as security for issuing more currency, which in turn may be loaned and a new note obtained. This process is limited only by the extent of the demand for loans by persons with good credit standing, and the amount of the gold reserve available. Many authorities consider the elasticity of the present currency system one of the most fortunate results of the Federal Reserve Banking Act.

Money Parity

With all these different forms of currency in the United States it may seem surprising that they all maintain the same value. At least a dozen different kinds of currency may be used in making a payment of five dollars, yet they are all precisely equivalent. It would be most inconvenient if the money bearing the imprint of the United States Treasury should have values which were not consistent, so that an article might be worth $1.25 in gold, $1.00 in silver certificates, and 75 cents in national bank notes. This situation is avoided by making all forms of money interchangeable. It is ordinarily possible in the United States to change any form for any other form desired at the United States Treasury. They are regarded, therefore, as having the same value.

Gold Standard

In addition to this internal dependence between the forms of money, one of them, the gold dollar, is given an outside relationship. Consequently, all other forms of money take their value from it —it is the standard money. The gold dollar which weighs 25.8 grains, of which 23.22 grains are pure gold, is by law the *monetary unit.* The government maintains a free interchange between gold coin and gold bullion and therefore the value of one dollar cannot vary from the value of 23.22 grains of fine gold. If dollars are less valuable than bullion, persons will procure dollars from the Treasury and melt them into bullion. This new gold in the market will soon cause the price of gold bullion to fall to the level of the dollar. Likewise, if dollars are more valuable than bullion, persons will take bullion to the mint and exchange it for dollars, which will serve to decrease the supply and raise the price of bullion to the level of dollars. Thus equality is continually maintained, that of the various forms of money with the gold dollar and of the gold dollar with the gold bullion market.

It is not essential that gold be the standard. Some other commodity might be taken. The standard money of China is silver. Henry Ford has proposed that our standard consist of stores of diverse commodities kept in warehouses. However, gold has certain qualities which give it peculiar advantages as a standard. As compared with most commodities, its value is stable, owing to the nature of its demand and supply. Gold is used chiefly for ornament, decoration, and jewelry. Such a demand is much more elastic than that for necessities; that is, there may be wide fluctuations in demand with relatively small change in price. And the supply varies but little, for, because of its durability and use, the accumulation of gold has become so great that the addition to it from the mines each year is relatively small. Consequently, the value of gold varies much less than that of most commodities. Furthermore, it is easily and cheaply transported and has a market all over the world. For these reasons gold has come to be recognized as the money standard in most of the countries of the world.

Fiat Money

Monetary systems are not always so well adjusted. It sometimes occurs that the value of money gets away from the legal standard. During the Civil War, the Federal government, believing that the war would be of short duration, did not make adequate provision by taxation for its heavy expenses and was forced to pay its bills by printing and passing out unsecured paper money, called greenbacks. They did not bear the statement that the government would redeem them in gold or silver but were merely pieces of paper with the name of the United States of America and the statement—One Dollar—on the face. Such money, having no metallic or redeemable value, is called *fiat money*.

During the world war and after, many countries resorted to the same method of financing. In some countries, as in England, the gold ordinarily held in reserve against paper money was needed to buy goods in the United States. In order to preserve the government gold supply for this purpose the payment of specie on notes was suspended. In many other countries not only was the gold redemption of existing money suspended but new paper money was issued without any gold reserve behind it. This practice reached its furthest extreme in Russia, Austria, and Germany.

The value of fiat money is not closely related with other forms of money or any commodity. It may pass on a basis of equality with other money, but any doubt of the stability of the government or its ultimate ability to redeem this issue in gold will result in a discrepancy between the value of paper money and gold dollars. Since both are legal tender and must therefore be accepted for payment of debts, neither can fall below the value upon its face. So the fiat money remains at its face value and the gold goes to a premium. Obviously, persons having both paper money and gold coin will use the paper money to pay debts, and keep the gold coin. In the same way, when Canadian money was at a discount, or the reverse of being at a premium, in the United States, people got rid of it as quickly as possible. This rule, that bad money drives good money out of circulation, is called Gresham's Law.

Effects of Fiat Money

Any considerable issue of paper money is accompanied by a rise in the price level. Money and goods are each valued in terms of the amount of the other which can be obtained in exchange. If during the increase in production which has taken place in the last fifty years there had been no change in the amount of money in circulation, dollars would have become relatively scarce and more goods would have to be given in exchange for a dollar—that is, prices would have declined. If, on the other hand, money should become very plentiful while the volume of goods produced is unchanged, then more dollars have to be given for goods, or prices rise. With a large issue of paper money, money becomes cheaper and buys less—prices go up; and vice versa.

The issuance of large sums of fiat money and the consequent raising of prices have a serious effect on business. As long as prices advance there is feverish business activity, especially in foreign trade. The fact that internal commodity prices do not rise as rapidly as foreign exchange rates fall makes a favorable market for foreign buyers. Moreover, uncertainty about the value of the monetary unit causes hesitancy on the part of business men and eventually a standstill in legitimate business. The loss to individuals is more direct and is felt sooner. Many persons are unable to follow carefully the changes in store prices as compared with the fluctuating value of the bills in their pocketbooks and the average man is forced to buy uneconomically and before long is in actual want. These conditions were clearly illustrated again and again during the period of inflation in Germany.

Tourists are often embarrassed by the fact that money which is good in one country will not be accepted in another. In order to pay bills in another country, it is necessary to have a rate of exchange between the currencies of the two countries. When two countries are both on the gold standard the rate of exchange will be according to the relationship of the amount of gold in their respective monetary units. The English pound sterling contains 4.8665 times as much gold as an American dollar. Its normal exchange rate, or *par,* is therefore 4.8665 dollars for one pound.

Foreign Exchange

Foreign exchange between countries on the gold standard is seldom exactly at par. It moves between two points, called the *gold points,* the upper one of which is par plus the cost of transporting gold to the other country and the lower one par minus the cost of transportation. If the rate of exchange is higher than the gold point persons having payments to make in the other country will not buy exchange but ship gold instead.

The shipments of specie which must be made between countries are by no means as great as the amount of exchange done. Normally there are Englishmen who desire to pay bills in America and Americans who desire to pay bills in England. Suppose, for example, A in England has to pay

B in America $200, and C in America has to pay D in England $200. A goes to his bank in England, pays $200 and receives a draft on a bank in America which he sends to B. C goes to his bank in America, pays his $200 and receives a draft on a bank in England which he sends to D. B draws out $200 from the American bank and D $200 from the English bank. Both transactions have been settled, all payments made and no shipment of coin has been necessary. The many such transactions are handled by a small number of banks, which makes such "clearing" possible. Whether the exchange rate will be slightly above or below par depends upon whether the payments from the country exceed those coming in.

When one or both countries are not on the gold standard the situation is much more complicated. Then the rates of exchange are likely to fluctuate widely. This tempts many individuals to speculate by buying foreign money in hopes of a rise in the rate of exchange. In Austria, the widespread speculation in German marks, in 1923, was so great that the collapse of the speculation caused a financial panic and ushered in a severe depression.

The difficulty of determining the rate of exchange in such cases lies in the fact that the currencies have no common basis of measurement. In a country not on the gold standard because its government does not redeem paper currency in gold, the value of money depends upon the amount of fiat money issued, the stability of the government, the expectation of stabilization of the currency, the expectation of resumption of redemption, the extent to which the population grasps the situation and readjusts prices accordingly, and the balance of trade. These factors are so varied and so shifting that stable foreign exchange is impossible. This, in turn, hampers foreign trade, for agreements made when the rate of exchange is at one point may be absurd when the exchange shifts. Certain countries, Brazil for example, have for long periods had unstable currency and a fluctuating exchange. The results of such a policy are generally disastrous.

For a general discussion of money, see Harold G. Moulton's *The Financial Organization of Society,* or D. H. Robertson's *Money.* An excellent study of our experience during the Civil War is Wesley C. Mitchell's *History of the Greenbacks.* For the records of the last war, see the government document, the *Report* of the Commission of Gold and Silver Inquiry, also Gustav Cassel's *Money and Foreign Exchange After 1914.* For the details of the working of the exchange market, a conveniently small volume is T. E. Gregory's *Foreign Exchange.*

CHAPTER XI

CREDIT AND BANKING

IN the efficient exchange of goods, money was a vast improvement over barter. It divided the process into two parts and brought about the use of a generally accepted medium, simplifying the economic relations of men, as we have seen. The introduction of credit was a further improvement. Credit enters when the time element is introduced. If A sells goods to B, permitting B to take the goods and pay for them at a later date, A has extended credit to B. Credit enters into any transaction in which one party withholds payment until a future date.

The Nature of Credit

The extending of credit makes possible a great many transactions which otherwise might not be possible. When credit is given or received it is no longer necessary to have income and expenditure exactly balance. It becomes possible to borrow or lend and thus adjust the two as need arises. In certain forms, such as mortgages and bonds, the credit loan may have a life of many years, but much of the business man's borrowing is for from one to six months.

Credit Instruments

By far the most generally used credit instrument is the check. A *check* is a written order by some person against a bank in which he has a deposit, generally in favor of some definite individual. Many checks are made payable to "Bearer", but whether payable to bearer or to some specified individual they can be transferred by indorsement. A *certified check* is a personal check bearing the statement of the bank against which it is drawn that it will be honored when presented. When a bank certifies a check, it sets aside from the man's account the sum necessary to make the payment whenever the check is presented. Certified checks are requested by receivers of payments as a protection against fraud on the part of the person drawing the check; they are used also by persons who expect to cash the check at some place where they cannot readily be identified. A *cashier's check* is an order drawn by the cashier of a bank on his own bank.

A *promissory note* is the credit instrument used in direct loans. It is a written promise to pay to some person or bank a certain sum of money either on demand or at a definite date stated on the face of the note. The note is usually endorsed by other persons, who thereby accept responsibility for the payment of the note when due. When a business man wishes to get payment before it is due on a note which he holds from some other business man he sells it to a bank, in which case the bank is said to have discounted the note. If that bank sells it to another bank or a Federal Reserve bank the note is said to be rediscounted.

A *bill of exchange* is a written order signed by A ordering B to pay a sum of money to C, either on demand or at some fixed date. This is possible only when B owes money to A. If B has stated his willingness to honor the bill by writing "accepted" and his signature on the face of the bill, it is called a *trade acceptance.* Similar notes drawn by one bank ordering another bank to make a payment are called *bankers' bills* or *bankers' drafts.*

A *traveler's letter of credit,* used chiefly by tourists, is a blanket order by a bank in favor of some individual authorizing the bearer to draw on any of its correspondent banks up to a certain total amount. A *commercial letter of credit* is a similar order granted to business concerns active in foreign trade. Such a form of credit eliminates the necessity for repeated loans from the bank to the firm.

There are at least four sources of short-term credit: individuals; "the trade"; credit, loan, insurance companies, and the like; and banks. It often happens that an individual has at least temporarily an income in excess of expenditure. This surplus can be loaned to other persons who temporarily have an excess of expenditures. Individuals are continually borrowing and lending small sums to relatives and friends on a personal basis, but in comparison with other sources the business man obtains little credit in this way.

Sources of Credit

A more extensive source of credit is "the trade". It is customary in many lines for purchasers to be given time in which to pay their bills. The custom varies in different trades, but the buyer is allowed thirty, sixty or ninety days. Retailers extend credit to consumers, though seldom for more than a month; wholesalers extend credit for longer periods to retailers; and wholesalers in turn often make time payments to manufacturers. Certain industries have endeavored to do away with the credit burden by offering discounts to purchasers for cash payments. In other cases, trade bills are sold to some bank at a discount, and are then held by the bank until due.

An interesting development of trade discount is the bait which has been employed, especially since the world war, to persuade the public to increase its purchases, the instalment plan. In 1925 the doctrine of "Enjoy while you pay" was the basis for the sale of 75 per cent of the automobiles in that year. In certain other lines, notably furniture, musical instruments, and the larger electrical housekeeping appliances, the instalment plan also is widely used. It differs from the regular payments made on a diminishing mortgage in that in instalment buying, ownership is not actually transferred until all payments are made. Failure to complete payment results in the loss not only of the object bought but also of all payments already made, while in case of failure to keep up payments on a house the house is sold and any return above the amount still due on the mortgage goes to the original purchaser. Frequently the instalment loan is sold by the manufacturer to a "finance company", a corporation organized for the purpose of financing instalment transactions.

There are many kinds of enterprises which make loans, yet are not banks. Building and loan associations are strictly regulated by state legislation and are usually permitted to loan against real estate up to 60 per cent of its market value. Insurance companies often loan on policies up to a point very near their "surrender" value. Pawnshops make loans against personal property as security.

Banks

The chief source of short-term credit is the banking system. The most important kinds of banks in the United States are:

1. Private banks.
2. Investment banks.
3. Savings banks.
4. Trust companies.
5. Commercial banks.
6. Federal reserve banks.

Private banks are generally unincorporated organizations or co-operative credit and loaning associations. *Investment banks* also are often unincorporated but concern themselves particularly with the promotion of large industrial enterprises, the underwriting or guaranteeing the sale of stock and bond issues, and the selling and distributing of securities. *Savings banks* are agencies which accept deposits from individuals and then invest them on their own account. From the return of these investments, which are carefully safeguarded by state regulation, interest is paid the depositors or credited to their accounts and the bank meets its expenses and earns a profit. *Trust companies* were originally formed for the purpose of administering estates or acting as trustees. They have gradually extended their functions, so that many trust companies are now active as savings banks and commercial banks. *Commercial banks* are the main resource of the business man. They offer him many services—a safe place to deposit surplus cash, a checking account by means of which he may pay bills of odd amounts at distant points without extra cost and, above all, a place to borrow money.

Loans

The business man may obtain funds from a commercial bank in one of three methods. He may borrow directly on his own signature and reputation, including, if required, the signatures of one or two responsible persons who guarantee the payment of the debt when due. These persons, called endorsers, actually promise to make good the payment of the loan if the original borrower is unable to do so. Secondly, he may borrow on some security, such as his house, his automobile, or stocks and bonds which he may own. Or finally, he may transfer to the bank some claim which he possesses, thus giving the bank the right to collect the debt when it falls due. The last procedure is called discounting.

Where does the bank obtain funds with which to make loans? In the first place, it employs its capital, surplus, and undivided profits,—the investment of the stockholders in the bank. In addition, a large part of the deposits can be loaned out; not all of them, however, for the bank must keep a certain cash reserve on hand to meet any demand which depositors may make for their funds. Since the cash which the bank keeps in the till is idle and not earning money, the bank naturally endeavors to keep this fund as low as possible and yet be able always to meet demands. Also, for the sake of safety, the bank's investments must be such that a large part can be quickly converted into cash if the need should arise. One important feature of the Federal Reserve system is that it enables any bank to turn good commercial paper into cash very quickly.

It is necessary to note that when banks make loans, the actual procedure is to credit the amount to the borrower's account as a deposit. Consequently loans may be said to create deposits as well as deposits to create loans. Any one bank is limited in the extent to which it can create new deposits by extending loans, because most of its borrowers will wish to pay bills to persons having accounts in other banks. The first bank will then have to pay to other banks from accounts created not by the deposit of cash but by its loan. However, when all banks expand loans at about at an equal rate there is no such limitation, for the amounts which any one bank's borrowers owe to depositors in other banks will roughly be offset by similar debts of borrowers from other banks to depositors of the first bank. In such a case the settlement can be made by "clearing", as explained later in this chapter, and the only limit is that fixed by the amount of gold in the bank's vaults, the reserve required by law, and the available safe demand for loans.

Another important activity of banks is to issue money, called bank notes. The types of money issued by American banks at the present time have already been noted in the last chapter. Since the establishment of the Federal Reserve system, the Federal Reserve banks have taken over the more important phases of money issue and the part played by the commercial banks is of minor significance.

The operations of commercial banks are carried on in the United States under careful governmental supervision. Banks are required to make detailed reports and are subjected to examination by government officials as a precaution against fraud and negligence. Requirements concerning reserves, the nature of loans made and the like, are laid particularly on banks which, having fulfilled certain requirements, are known as *national banks.*

The Federal Reserve System

The Federal Reserve system was inaugurated in 1914. For its purposes the country is divided into twelve districts, each of which has a central bank called a Federal Reserve bank. The entire system is headed by the Federal Reserve Board, appointed by the President. Individual banks which belong to the system are called "member banks". All national banks are required to be member banks and state banks and trust companies are permitted to join on complying with certain conditions.

The stock of each Federal Reserve bank is owned by the member banks in its district. Each Federal Reserve bank is governed by a board of nine directors, six elected by the member banks and three appointed by the Federal Reserve Board. Federal Reserve banks are not run for profit. After 6 per cent dividends have been distributed and a sufficient surplus built up, the remaining profits, if any, are taken by the Federal government.

The Federal Reserve banks are bankers' banks.

They do not deal with individuals, but lend to or receive deposits from member banks. Member banks are required to keep certain reserves in their Federal Reserve bank, which thereby acts as an agency for pooling all the reserves in the district. Member banks also may rediscount eligible commercial paper with the Federal Reserve bank. In other words, when a member bank wishes to obtain cash for commercial paper which it holds, it may sell it to the Federal Reserve bank just as an individual sells to the member bank.

The importance of the Federal Reserve system cannot be overemphasized. Prior to 1914 the banking system was unorganized. The Federal Reserve system greatly strengthens the banks because it pools their reserves in a central banking system. These central banks are ready to relieve member banks of commercial paper if they must have ready money. Under the new system the Federal Reserve member banks can live through periods of financial strain which before might have caused them to close their doors. Prior to the institution of the Federal Reserve system industrial crises like those of 1893 or 1907 were accompanied by runs on banks and bank panics. Such catastrophes are practically impossible now. Where such have threatened, aeroplanes have been used to rush cash from the Federal Reserve bank to the struggling banks.

Furthermore, the Federal Reserve system is not run to make a profit but presumably to aid and guide business. It should therefore tend to guide the granting of credit more wisely, in terms of business welfare, than can the unregulated banks themselves. As long as a member bank extends its own credit directly the Federal Reserve bank has no influence over its actions. But as soon as it must come to the Federal Reserve bank to have its paper rediscounted the Federal Reserve bank, by charging a higher rate of discount, can discourage the further extension of credit. Furthermore, money available for loans can be wisely distributed throughout the country, for the various Federal Reserve banks often extend loans to each other. The Federal Reserve banks also enter into the open market for commercial paper. By purchasing or selling in large quantities they can directly influence the money market of the country.

Certain authorities claim that the key to the problem of economic prosperity and depression lies in the banking system. Certainly, there can be no doubt that in a society as dependent upon credit as ours, banking operations play a very important part. The banker by extending or withholding credit can to a considerable degree guide the development of industry.

Clearing

Since all transactions must be paid for sooner or later, it might be believed that the use of credit would not affect the amount of work done by money. However, the principle of clearing does greatly reduce the requirements for cash.

Suppose A and B are farmers and A lets B use his team and charges him $20. B on the other hand lends A his reaper and charges him $30. If the transactions were carried out without any short-cut, B would hand over $20 to A and A hand over $30 to B. Instead they "clear" their debts. Any amount which is owed by both can be cancelled. In the instance just cited $20 would be "cleared" and the only payment would be that of $10 from A to B.

This procedure of clearing is carried out on a much larger scale in the business world, especially between banks. The widespread use of checks means that persons are continually depositing in their banks checks drawn against accounts in other banks. Similarly, other banks are receiving checks drawn against accounts in the first bank. These charges and counter-charges could be settled, of course, by payments of money back and forth between the banks, that is, like A handing $30 to B and B $20 to A. If there were only two banks in a community, they would clear as do A and B. But since there are many banks, those in large communities have organized clearing-houses. At a specified hour every day each bank sends to the clearing-house the checks which it holds against other banks—Bank A sends in all the checks it has received that day against all the other banks in the community and all the other banks send in the checks they have received against Bank A, and so on. If the checks against Bank A total more than the checks Bank A has on other banks, Bank A must pay the balance to the clearing-house in cash; if the reverse, the clearing-house pays the balance to Bank A. And so far each bank. This obviously simplies the procedure of making payments and reduces the work which money must do. In the 68 years of operation of the New York Clearing-house between 1854 and 1921, three and three-quarter billion dollars in checks were turned in by the banks, of which three and a half billion were cleared and only about seven per cent had to be settled in cash.

The Federal Reserve banks also have established themselves as clearing centers for their respective districts. For the clearing of checks among the twelve Federal Reserve banks, a gold settlement fund was established in Washington. Each bank was required to deposit its share of gold in this fund. The check debits and credits of each Federal Reserve bank are reported daily by telegraph and the proper amounts of gold shifted from the credit of one bank to another, corresponding to a cash payment on unbalanced checks. Thus, much of the business of the country, even between distant points, is transacted without any actual movement of money whatever.

Labor Banks

The discussion of banking would not be complete without noting one of its most interesting recent developments, the labor bank. In 1920 the first labor bank was organized. The early ones were sponsored particularly by the railroad unions, whose insurance funds were enormous and who therefore were in a position to benefit decidedly by organizing their own banks. By August, 1925, there were 32 labor banks in the United States and 21 new ones were projected. It must be kept in mind that these banks are no different from commercial banks except in the matter of ownership.

They are owned by trade union members and their business is chiefly with such individuals. In many cases special services are given, such as the extensive dealing in remittances to Soviet Russia by the Amalgamated Bank in New York.

For actual insight into the nature of the present banking system, examine the annual reports of the Federal Reserve Board. General discussions are found in Harold G. Moulton's *The Financial Organization of Society,* and John T. Holdsworth, *Money and Banking.* The *Federal Reserve Bulletin* each month summarizes the condition of the banking and industrial world. For an analysis of the record of the Federal Reserve System, see B. H. Beckhart's *The Discount Policy of the Federal Reserve System.* A detailed study of the clearing system is found in W. E. Spahr's *The Clearing and Collection of Checks.* The best statement of the technical aspects of present-day banking is E. A. Goldenweiser's *Federal Reserve System in Operation.*

PART FOUR

THE INSTITUTION OF PRIVATE PROPERTY

CHAPTER XII

THE BASIS OF DISTRIBUTION

The Problem

WHEN goods have been produced, although the machinery for exchange is ready, the question still remains: How shall they be distributed? To whom shall they go and in what proportion? The income of a factory must be distributed among hundreds of different claims. The eleven cents paid for a loaf of bread is finally divided among the farmer, miller, the railroad, baking powder factory, grocer and many others. Each of these in turn must divide the income of his or its business among various claims—for wages, rent, materials, insurance, interest and dividends, power, and other costs. Suppose the entire country to be like that one factory, with all its products its income. The income must be distributed. There is no natural law on which to base the apportionment, and any of a number of bases may be chosen.

Shall these goods — the nation's income — be evenly divided among the entire population? Shall they be given to the workers who made them? Shall they be allotted according to the need of the recipient? Shall they be divided according to the importance of the recipient to society? Or shall they be distributed according to the value of the contribution made by the individual to their production—assuming that some basis can be reached for determining the value of the contribution made by each?

Private Property

At the basis of our present scheme of distribution is the institution of private property. The right of private property gives an individual exclusive control over those objects which he possesses. His control is such that he may use and enjoy the object himself and may prevent others from enjoying it. In other words, private property belongs to some individual and virtually does not exist for other persons unless the owner so desires.

Ownership may be acquired in many different ways. It may be transferred from one person to another by gift, exchange, inheritance, or theft. The first ownership of an object is acquired either by conquest or creation. In the case of land, original ownership is assumed merely by taking possession and making the claim. In many cases the state lays claim to land not previously owned. In the case of newly created commodities each producer owns his product. If it is produced by some object, the owner of the producing object receives its product; the owner of the cow automatically becomes owner of the new-born calf. Often several individuals co-operate in producing a commodity. In such cases, by previous arrangement one purchases from the others their shares in the ownership. When this previously made arrangement is put in legal form it is called a contract and stands as a supplement to the right of private property. The *right of contract* declares men to be free to make agreements, but, having done so, to be compelled to abide by them.

Since the right of private property is one which prevents persons from doing as they please, because other persons have the right to exclude them from enjoying certain objects, it requires strong enforcement. Having become an established institution, the whole weight of social custom is thrown towards its maintenance. In addition, enforcement has been undertaken by the government and a large part of our huge legal structure is engaged in the protection of property rights.

The government not only enforces the right of private property but also indirectly limits it. When the government regulates the use of property to any considerable degree, in like degree it lessens the exclusive control of the owner. A century ago the tendency was decidedly away from government interference with private property. Such a policy is called "laissez-faire"—a let-alone policy. In more recent times governments have tended to encroach upon the established rights of property-holders, insisting that they conform to various regulations in the administration of their property. This is evidenced by the introduction of public utility regulation, sanitation and housing laws, safety and labor laws and trust legislation. In some fields, such as forestry, power, and shipping, public property exists as well as private property. But in most industries the encroachment of government upon the free control of property has been very slight.

Distribution of Property

Unfortunately we have no authoritative statement concerning the distribution of private property in the United States. The best estimate is one made by Dr. Willford I. King for the property owners in the United States as of December 31, 1921.[1] His results indicate that:

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[1] Willford I. King, "Wealth Distribution in the Continental United States," in the Journal of the American Statistical Association, June, 1927.

The "rich," owning $50,000 or more of wealth, 2 per cent of the people, own 40 per cent of the total wealth of the country.

The "middle class," owning from $3,500 to $50,000 of wealth, 33 per cent of the people, own 45 per cent of the total wealth of the country.

The "poor," owning less than $3,500 of wealth, 65 per cent of the people, own 15 per cent of the wealth of the country.

It is important, in surveying the figures, to keep in mind that more than one-half the wealth of the country consists of real estate. The significance of the figure appears in the further fact that, whereas the average wealth of farmers on December 31, 1921, was $8,144, that of non-farmers was but $6,638.

Many believe that recently, especially since the world war, there has been a much wider distribution of wealth. It is claimed that the middle class and the poor are able to invest, as a result of higher wages, restriction of immigration, prohibition or other causes, and have adopted a new attitude towards capital, becoming capitalists in a small way. Such ownership of securities must not be taken for more than it is worth, however. It does represent savings, but the purchase of securities by the working class assumes more the form of lending money to capitalists already in control, rather than the actual obtaining or even sharing of control by workers. Corporations are governed by the possessors of a majority of the stock, and the small holdings of many workers are usually but a small percentage of the large holdings of a few capitalists.

The National Income

Private property includes all economic goods which have already been distributed among owners. These we have mentioned in discussing wealth. A stream of new economic goods and services is constantly being created which must be distributed for the first time. This new addition to the wealth of the nation is sometimes called the *national income.*

In estimating the national income care must be taken lest items be counted twice. Each industry must be credited with its contribution rather than the total value of goods which it produces. For example, the miller does not add to the national income the total return which he receives for the flour, but merely the difference between the value of the raw material which he obtains from other industries and the value of his product. Estimates by the National Bureau of Economic Research place the national income for 1926 at 89.7

billion dollars. No allowance has been made in this estimate for the money value of work done by housewives for their own families. This would add perhaps eighteen billion dollars in 1926, if all housewives were paid on a commercial basis. The fact that there is not only a "national income" to be divided, but also a *rapidly increasing* amount for division, makes the problem of distribution a more difficult one. The reduction of these figures to a per capita basis indicates that income per person for persons receiving income has increased from $791 in 1909 to $2,010 in 1926. Expressed in terms of the purchasing power of the 1913 dollar, the increase is from $823 to $1,186.

That part of the distribution of income which is carried on by graft, stealing, governmental corruption, tax evasion, gifts, and the like cannot receive more than mere mention here. It is probable that this type of distribution is a very small part of the whole. The great part of the national income is distributed in the open.

We now face the problem of how this total income in distributed. Out of our many economic activities this product of prodigious value has resulted. Claims are made upon it by labor, ownership and government. The division of the national income among these three groups constitutes the subject matter of the three chapters which follow.

In 1918, according to the estimates of the National Bureau of Economic Research, 86 per cent of the income receivers had an income of less than $2,000 and 14 per cent more than $2,000. These figures were taken after the increases resulting from the impetus to business during the war had set in. Prior to 1914 only 4 per cent received incomes of more than $2,000. The significant point is that this 4 per cent received nearly one-third of the national income. In 1918 about one-half the national income went to one-fifth of the income receivers; the remaining one-half went to the other four-fifths.

The best estimates of the national income are found in three volumes published by the National Bureau of Economic Research, *Income in the United States,* one volume giving a summary of the results, and one volume indicating the detailed figures and methods used, and *Income in the Various States,* which brings the total results through 1921, and distributes them by states. Much important material can be found in the annual report on incomes published by the Bureau of Internal Revenue, and a recent publication of the Federal Trade Commission attempts to give a distribution of incomes.

CHAPTER XIII

LABOR INCOME

Labor's Share

THE largest share in the national income is that of labor. Roughly speaking, this share varies from two-thirds to three-quarters of the whole. In agriculture, an estimate of the average for the decade 1909-1918 places the share of labor at 63 per cent and the share of ownership at 37 per cent. The combined records of mines, factories and land transportation for the same period give labor's share as 71.2 per cent and the share of management and ownership as 28.8 per cent.[1]

These shares fluctuate somewhat from year to year, following the course of business conditions. In general, it appears that labor receives a large share in poor business years, and a smaller share in good years.

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[1] These figures are derived from the studies of national income made by the National Bureau of Economic Research. For agriculture the percentages represent returns for management and labor as set against the returns for ownership of property, including cash used as working capital. For the highly organized industries labor income consists of wages, salaries, pensions, compensation for accidents and the like, set against rentals, royalties, interest and dividends. In all cases the percentages refer to the "net value product," which does not include the value of raw materials, supplies and services received from other industries. For two reasons the item of ownership income is perhaps too large. First, management often requires work which is paid for in part by profits. Second, although going concerns deduct their losses from profits the losses arising from bankruptcies are not included in these figures and may make an appreciable offset to the income received by active business men and investors.

Hired Labor Income

In addition to the figures for total labor income, figures for hired labor income are available. Labor income and income received by hired labor are not identical. Much work is done that is not paid for in the form of settled wages or salary but rather in the form of profits. The farmer and small shop-keeper usually draw no specific wages, but a considerable part of their profits must be assigned as payment for their labor.

The following figures give the average share of the total received by employes for the ten years 1909-1918. Labor of all grades was included and the payments took the form of wages, salaries, pensions, compensation for accidents and the like.

	Per Cent Paid to Employes of Total Net Value Product		*Per Cent Paid to Employes of Total Net Value Product*
All Industries[1]	53.5	Hand trades	59.7
Government	91.6	Unclassified industries	59.7
Transportation by water	79.6	Public utilities	53.2
Factories	74.0	Banking	31.1
Mining	69.8	Agriculture	12.7
Railroads	64.8		

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[1] Agriculture includes stock raising, market gardening, etc.; factories includes lumbering and shipbuilding; hand trades includes building and construction other than shipbuilding; government includes schools and government-operated enterprises under state and local as well as national governments; public utilities includes street railway, electric light and power, telegraph and telephone companies.

Source: National Bureau of Economic Research, **Income in the United States.** New York, 1921. P. 92.

The wide variations in percentage for various industries require some discussion. The share of hired labor is low in agriculture because the farmer and his family do much of the work on the farm while drawing no recognized wages. In banking the share of labor is low because the industry is one in which the work is done chiefly by capital. The hand trades are small enterprises like agriculture and the public utilities are like banking in their large capital requirements. In the more highly organized industries like mining, manufacturing, water transportation, and government the employes' share comes to about three-quarters of the total. For all industries, the total is reduced to slightly more than one-half by the fact that agriculture, with its extremely low wage-bill, is one of the largest and most important groups.

The Laborer

There are many kinds of laborers. We are accustomed to speak of the unskilled or skilled laborer, generally meaning by the terms, men who do physical work, according as it is simple or complicated. But in discussing the problem of labor income we must include as laborers those who do mental work as well as those who work with their hands. The salaried employe is a laborer as well as the man at the factory bench. Lawyers, bank presidents, and ditch-diggers all receive labor income. To be sure, many laborers also receive ownership income. At present we are concerned with their personal earnings, not the earnings of those economic goods which belong to them.

Types of Labor Income

Labor income takes four forms:

1. Money wages and salaries.
2. Working conditions.
3. Leisure time.
4. Free income.

Money wages are the actual payment which the individual receives from the paymaster or cashier—the contents of the pay envelope or the face value of the check, as the case may be. *Working conditions* represent the various items of advantage or privilege which the laborer receives from his employer but which do not appear in the pay envelope — industrial instruction and training, workmen's compensation, nurse and accident service, sanitary and health protection. They are charges which the concern must pay and which are received by, and therefore must be credited to, labor. *Leisure time* is determined chiefly by the length of the working day and represents the extent to which the worker is free to direct his own activity. *Free income* includes those items of advantage or privilege which come to the worker from society. Parks, recreational facilities, libraries, education, and such benefits are included under this heading. Since the worker does not receive this free income because he labors, it is not strictly comparable with the other forms of labor income. However, the first three are determined by a process of agreement with an employer and are not automatically dispensed.

Definition of Wages

The term wages is likely to be confusing because of its many uses. *Wage rates* are the amount paid per unit of work. This unit may be a measure of time, as hours, weeks or years, or a measure of physical work done, as number of bricks laid or sleeves sewed or tonsils removed. A wage rate has very little significance by itself. A coal miner may work under an agreement which pays him $1.08 for each ton of coal he mines. His total wages therefore depend upon the amount of coal he mines. So it may happen that one mine with high wage rates but irregular operation will actually pay its miners less in a year than another mine with low rates but steady output.

Nominal wages are the amount in the pay envelope. They are the worker's actual receipts, computed by multiplying the number of units of work done by the wage rate. Nominal wages are a definite sum of money. They are often called *earnings*.

Real wages are the amount of purchasing power represented by the nominal wages. The laborer is not interested in getting money for its own sake. He works for money, but he desires it only for the things it can buy. But money changes in value as the price level changes. His real wages must be measured in the things which can be purchased by the money he receives. In the early years of the world war when both prices and wages rose but prices more rapidly, the laborer found the amount in his pay envelope increasing, —but his real wage was actually decreasing. He could not buy as much with his increased wage as he did before with a smaller sum at the lower price level. Any fundamental discussion of wages must accordingly consider the level of prices as well as the wage payments.

It is interesting to note that after a number of years of unchanging real wages, the workers have made a decided advance during the last ten years. Professor Whitney Coombs estimates the increase in real wages for unskilled labor between 1913 and

1924 to be 20 per cent. Professor Paul Douglas finds the increase for workers in general between 1890 and 1924 to be 28 per cent, all in the last few years. Professor Brissenden fixes the increase at 27 per cent. And this increase has taken place during a period when the hours of work have been markedly decreased. However, production per capita has increased by about 50 per cent during the same period.

Wage Bargaining

Wages are prices. The laborer has something to sell which the employer is eager to buy. The price to be paid, or wages, must be bargained about between the employer and the laborer. In this bargaining process the worker is at a distinct disadvantage for the following reasons:

1. The sale of his labor is a matter of life and death to him; to the employer it involves only financial gain or loss.
2. The laborer generally has only a small reserve fund and cannot withdraw from the market for any lengthy period.
3. The laborer's services are perishable; they must be sold at once, for they cannot be stored.
4. There are few employers and many laborers.

5. Skill and cleverness in bargaining, and knowledge of market conditions are usually on the side of the employer.
6. Laborers often cannot move readily from place to place nor can they import a factory in which to work, as an employer can import workers for his factory.

To offset the disadvantages to which the industrial bargaining process subjects the worker, trade unions have been organized as a means whereby laborers may bargain collectively with the employer. From an utterly disorganized market the labor market has become in many industries highly organized. In a few industries arbitration machinery has been set up, a large part of the function of which is to determine wages.

Each industry has a total return which it must distribute between labor and ownership. Since the direction and control of the industry, by custom, are in the hands of ownership, there is always present an underlying force striving to keep at a minimum the payments to labor. In resistance to this force, situations sometimes arise giving labor an advantage in the bargaining process. Some of them are:

1. Rising prices and great business activity. At such times orders are plentiful and the employer is presumably making his greatest profits. He is for that reason eager to prevent any suspension and more willing to yield to the demands of his employes. This happened in 1919.
2. Effective and relatively complete union organization. In such cases competent labor leaders can go to the employer and bargain as one monopolist with another. The railroad engineers can do this.
3. Limited numbers. Where workers, either because of training requirements or closed shop agreements, can keep the number eligible for employment in the industry low, they can keep the share of each correspondingly high. This is only applying the law that scarcity causes high prices. The anthracite coal miners are limited by law to men having experience.
4. Knowledge and understanding of the particular business, its finances, general business conditions and, especially, the conditions in the particular market involved. Good bargaining requires such knowledge.

Increasing Wages

There are three possible sources of wage increase. Increases can be obtained from:

1. The share customarily received by other workers.
2. The share customarily received by ownership.
3. Any new additions to the value-product of the industry.

The first form of increase is not, of course, an increase in the total labor income but rather a new distribution of it. Certain workers get higher wages and others lower. In many industries there are customary *wage differentials.* These are the long-standing differences between the wages of various occupations within the industry. These differentials are jealously guarded. During the war, when wage changes were numerous, the new adjustment sometimes resulted in shifting some income from one group to another. In general the most noticeable change was that unskilled labor gained at the expense of skilled labor.

Labor may also obtain an increase from ownership income. Since income must go either to labor or to ownership, an increase in one means a decrease in the other, and vice versa. But to cut ownership income is far from easy, for ownership is also trying continually to increase its share by reducing labor income. This raises a question which all wage courts must decide—whether a "fair" ownership income shall be determined and the balance given to labor or a "fair" wage be determined and the balance given to ownership. In Australia wages are entitled to first serving, but in the Industrial Court of Kansas ownership received its income first.

Finally, labor may succeed in grasping some new addition to the value-product which has come to the industry for distribution. This addition may come from lower costs by reason of technical improvements in the industry, increased production, or higher prices of the product. Such conditions offer the most promising chances for increase in labor income.

Standard of Living

One persistent wage theory is that wages can never be above the minimum cost of living, since, if they are, large families result, thus increasing the labor force and ultimately driving wages down again. Though the fact that families will increase with higher income has proved to be untrue, the theory does emphasize one important relationship, that between wages and the standard of living.

Wages are to a considerable extent determined by the standard of living of the individuals concerned, that is, by what they are accustomed to spend for rent, food, clothing, recreation and the like; but to a much greater extent is the standard of living determined by wages. The law will not long permit a family to live beyond its income, and the pressure of various wants will usually not permit it to live far below it.

Attempts have been made by wage boards, in searching for a formula or law upon which to base their findings, to determine a wage rate which will maintain the standard of living. The Industrial Court of Australia declared that wages were "fair and reasonable" which allowed for the "normal needs of the average employe regarded as a human being living in a civilized community". The United States War Labor Board declared a living wage to be "the amount of wage upon which a worker and his family may be able to subsist in health and with reasonable comforts". Such definitions may be satisfactory in general but they are very difficult to apply to any particular wage bargain. Each of the terms must be defined much more exactly before it can be used to decide whether wages for a specific job should be $28 or $29 a week.

For an elaboration of the argument concerning the increase in wages, see Hamilton and May's *The Control of Wages.* Statistical records of changes in wages are found in publications of the Bureau of Labor Statistics, the *Monthly Labor Review,* and Research Reports of the National Industrial Conference Board. Two books by Herbert Feis, *The Settlement of Wage Disputes,* and *A Collection of Decisions Presenting Principles of Wage Settlement,* indicate the principles and procedure used in organized markets. For the activity of trade unions, see *Readings in Trade Unionism,* by David Saposs. An effective description of a wage dispute appears in William Allen White's *In the Heart of a Fool.* See also the *Life of Samuel Gompers,* and Mary Beard's *A Short History of the American Labor Movement.*

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CHAPTER XIV

OWNERSHIP INCOME

WE have already presented estimates which place labor's share in agriculture to be 63 per cent and in mines, factories and transportation 71 per cent. There remains, then, for ownership a share of 37 per cent in agriculture and 29 per cent in other industries.

What It Is

In discussing the rights of private property, we noted as one of its privileges, the ownership of all products made by the individual or by any of his possessions. The first are labor income. We now discuss the income which he receives because of his property right in its creator. Under the general head of ownership are customarily grouped three divisions—rent, interest and profits. Rent is the return to owners of land, interest the return to owners of capital, profits the return to owners or proprietors of business concerns. In a system based on slavery, the product of a man's labor would not go to him, but to his owner, so that labor income would tend to disappear, and all income go to ownership.

These incomes are not always recognized as such. The farmer who owns his farm does not consider himself to be paying or receiving rent. But the owner of land is always entitled to rent from the user of the land. That principle has been established by law and custom. If the owner and user are the same no actual payment is made, but the cost is by no means eliminated. It should be entered both as a receipt and an expense. If some one else owned the land payment would have to be made. Wages also are often a hidden expense and income, especially in the case of the farmer and small shopkeeper. We sometimes find a farmer crediting himself with a profit of $5,000 a year but giving his labor free, the use of his farm free and the use of machinery and buildings free. If he drew up an accurate statement, he might allot $2,500 as his wages, $1,000 as his rent, $500 as his interest, leaving only the balance, $1,000, as profit.

Only the scantiest data concerning ownership can be cited. A rough summary of the income tax reports for 1923 shows that the income of all persons reporting incomes more than $1,000, may be divided as follows:

Wages	48 per cent
Rent	6 per cent
Interest	20 per cent
Profits	26 per cent

Since these figures are not inclusive of the incomes of many small farmers and wage earners they tend to magnify the share of interest and profits. It should also be remembered that only the man who makes profits reports; he who loses during the year is permitted to remain silent.

The concentration of ownership income in the hands of the large income receivers is brought out by the following table:

Income	*Wages and Salaries Per Cent*	*Ownership Per Cent*
$1,000 to $2,000	79.5	20.5
$10,000 to $25,000	33.9	66.1
$100,000 to $150,000	14.1	85.9
$1,000,000 and over	2.9	97.1

Source: U. S. Bureau of Internal Revenue, *Statistics of Income, 1922.* Washington, 1925.

This concentration is by no means so evident in the case of rent and interest as in profits. The largest incomes are made up almost entirely of profits.

Land Rent In classic economic parlance, house-rent is not rent at all but interest. "Pure" rent is the payment for the use of land alone. Some idea of the importance of rent may be obtained from the fact that, in 1922, lands, improvements, and buildings in the United States constituted 55 per cent of the wealth of the nation. To be sure, a large part of this is represented by buildings. In cities this value of buildings bulks especially large but on the farm it is only about one-fifth of the value of the land. The largest item in the national wealth is land.

The rent of urban land is determined by such factors as the size and nature of the community, its concentration, the situation of the land with reference to shopping or residential districts, and the facilities for transit. Since urban land cannot be manufactured or removed, the fixing of its rent is a matter in which the owner has relatively little to say. He must accept some bid or his land lies idle. The demand for the use of his site will depend partly on what other sites are available at the same time. It is customary to rent land is cities on long-time leases, often for 99 years.

The determination of rent for rural land presents quite a different problem. Its rent depends mainly on the quality of the soil in the particular area and nearness of the market for its products. Better soil will, of course, produce more than poor soil with the same amount of labor. Farms nearer the market will require lower transportation costs for their produce and are therefore more desirable.

But rural land has many other factors entering into its rental price. The general condition of the market for agricultural products is quickly reflected in the prices of land and, less rapidly, in rental charges. This was evidenced by various excited land booms during the war brought on by sky-rocketing agricultural prices. A further consideration is that families may become attached to land by bonds of sentiment and habit, which add to its value in their eyes.

On the whole, rent has always proved to be one of the least elastic of prices. Once a rental is fixed by agreement between an owner and a tenant it tends to continue without change for years. Often long-time leases set the rent on farms as in the city for years in advance. Rent was the slowest to rise of all prices during the war. This stability resists forces which make for change in the amount of ownership income.

Interest

Interest is the return for the ownership of capital. It is most easily recognized in the borrowing and lending of money, when it appears as loan interest. It is also present as the return to all persons who have ownership rights in serviceable goods other than land. This ownership may be in the form of houses, factories, machinery, and other goods of the same sort.

Capital is often put to productive use. In the case of goods which are man-made, such as houses, factories, or machines, services are given out by the goods. These services have market value. It is recognized, by the principle of private property, that these services belong to the owner. The user who receives the service must therefore pay the owner, and thus interest arises.

In the case of loan interest, the time element is the central feature. The borrower, for one reason or another, desires money at the moment. He may have obligations which require payment; he may see an opportunity which will be lost if he does not grasp it at once. At any rate, he desires money immediately and is willing to pay an individual for the use of the right to ownership for a certain period, for either consumptive or productive uses.

The facts that many goods yield services and that, for various reasons, persons desire money now rather than later, create a curious situation —that future values are not equal to present values.

One dollar today is equivalent to one dollar and five cents one year from today. A dollar today is therefore worth more than a dollar one year from now, as viewed from the present. The five cents, which is called interest, is really the amount which an individual must pay to hold the right of ownership of the dollar for one year. He must pay back the dollar at the end of the year, with five cents for the service it has given.

Profits Profits are the return to the owners of enterprises. It is often very difficult, as in the case of the farm, to determine where wages, the payment for labor and management, end, and profits, the return for ownership, begin. The distinction is most easily drawn in corporations. It may well be that all that is done by the shareholders, the real owners of the concern, is to turn it over completely to a general manager. In such cases, ownership involves a very slight amount of direction. But, as owners, they are entitled to the earnings of their property.

In most business enterprises earnings are determined by the relation between the cost and selling price of their commodity. Factors which lower the cost in any plant therefore increase the profits of the plant. Changes in the market price of the product affect all the plants in the industry. The owners of the enterprise may claim only what is left after expenses have been met. Since the ultimate control is in their hands through their selection of managers, their position is not so helpless as it might at first seem. Nevertheless, their income is the most uncertain of all incomes and shows wide fluctuations from year to year.

It must be evident that there is little fundamental difference between these three kinds of income. In each case an owner receives from the user a payment for the giving over of his right. The landlord surrendered his land for a year; the capitalist gave up his money for a year; the stockholder lets the products of his enterprise go to other people for a year.

Capitalization

Ownership income is fundamentally different from labor income in that it is perpetual. Houses may burn down, but the insurance agent returns the ownership right in the form of a check. A bond is recalled, but the investor may buy another. Ownerships do terminate owing to poor judgment and unexpected events, but a well directed ownership right will continue bringing in income for perhaps hundreds of years, whereas labor income ceases when the laborer stops working.

This great succession of incomes accruing to an individual ownership is customarily summed up into a present value. Suppose a bond promises to pay five dollars a year for 500 years. Since five hundred payments of five dollars each are to be made, it might be assumed that the value of the bond would be $2,500. But because of the fact, mentioned before in this chapter, that future values are less than present values this is not the case. The five dollars due next year is worth only about four dollars and seventy-five cents this year. The five dollars due one hundred years from now is worth less than one cent today. If the *present* value of *future* payments be totaled, the value of the bond would prove to be about one hundred dollars. This process of determining the present value of a series of future incomes is called *capitalization.* Consequently an owner may get the present value of all his future incomes at any time he desires. The laborer, on the other hand, must wait for the future. By a process of capitalization, he might be worth $40,000—but he must remain "free and equal", and cannot therefore sell himself.

Ownership is generally acquired by means of saving, though certain items such as patents, good will, and the land originally discovered are not so obtained. For an individual or a nation, saving is possible when production exceeds consumption. A man with a large income can hardly consume all of it. He is automatically compelled to save. Those in the middle class most often accumulate as an insurance fund. Some accumulate in the hope of ultimately retiring from business. Others are saving for their children. And some save for the sheer joy of seeing the bank account grow.

Savings

The desirability of savings, from the social point of view, involves two salient considerations. First, savings represent an increase in the capital wealth of the nation and to that extent create increased facility in production. Second, savings result in the creation of new incomes. If the saving is done chiefly by persons who already have large incomes, it only serves to increase the disparity in distribution of income. It makes the large incomes larger, quite likely at the expense of the smaller. And third, savings by all except the wealthiest implies a curtailment of immediate consumption. If these savings are deposited in banks or loaned directly, they may be employed in creating productive goods, so that increased saving in a country indicates oftentimes a changing proportion between industries creating consumption and productive goods.

For a discussion of interest rates, see the Federal Reserve Board's *Annual Reports,* and *The Nature and Necessity of Interest,* by Gustav Cassel. For data on rural rents, see publications of the Department of Agriculture, for urban rents, of the New York State Bureau of Housing and Regional Planning. The trend during the years of the war, is clearly depicted in David Friday's *Profits, Wages, and Prices.* More general discussions of ownership incomes appear in Anna Youngman's *The Economic Causes of Great Fortunes,* and Thorstein Veblen's *The Theory of the Leisure Class.* Detailed figures appear in the reports of the Bureau of Internal Revenue, and the National Bureau of Economic Research.

CHAPTER XV

GOVERNMENT INCOME

LABOR and ownership can never feel certain of their income, even though the money may be in their pockets. For some of it may be taken away from them by the government. The sum taken from individuals directly out of their income, together with that taken directly out of industry and trade, constitute *government income.*

Expenditure and Taxation

Public finance is based on principles quite different from those of private finance. Individuals adjust their expenditures to their incomes. Our incomes are fixed by external circumstances. With these incomes fairly definitely fixed, we seldom spend much less and we cannot for long spend much more. In other words, the amount of our expenditures depends on our income. A government operates on a different principle. First it determines what it shall spend, then it arranges for an income to yield that sum. This is always possible, because a government can take what it pleases, even to ordering men to possible death in battle. Economy in government is not really a problem of taxation at all, but of expenditure. Taxation is the problem of how and from whom a desired amount of money shall be taken. This amount to be taken is determined by the appropriations and plans for expenditure made before the money is received.

Size of Government Expenditures

Government expenditures are amazingly large. Complete figures have been compiled for the year 1922 by the Bureau of the Census. These show government income for the year to have been as follows (figures are in millions of dollars):

Federal government	3,204
State governments	868
County governments	745
Incorporated places having more than 2,500 inhabitants	1,532
Incorporated places having less than 2,500 inhabitants	95
School districts	736
Townships	149
All other	96
Total	7,425

Source: U. S. Bureau of the Census, *Census of Wealth, Debt and Taxation, 1922.*

Even this total of seven and one-half billions is not complete. It does not include the sums which pass through the government's hands in operating enterprises like the post office and certain municipal public utilities. When such sums are added, the total cost of running our governments becomes approximately ten billions, or nearly one-sixth of the national income.

It is only within very recent times that government expenditures have reached such figures. In the last twenty years the total has increased six-fold. Four causes may be assigned for the increase:

1. Increase in territory and population governed. As the size and density of the population increase, the cost of government increases even more rapidly. The cost of governing one city of 50,000 persons will as a general rule more than equal that for two cities of 25,000 each.

2. Extension of the functions of government. The government has undertaken many new duties, some of which, like education, are extremely costly.

3. Changes in methods of warfare. Before the invention of gunpowder men fought without pay and with simple weapons. Today war is the most expensive luxury in which mankind indulges.

4. Extensive public improvements. The government must spend large sums on roads, parks, and public buildings.

Types of Government Expenditure

Since the functions of government are varied, the types of expenditure are varied. About three-fourths of the money spent by the Federal government represents the cost of past wars or preparation for future wars. Expenditures for state and local government are more constructive, the largest items being for education, public improvements, highways and police and fire protection.

The temptation is great to press for economy in government as a certain source of benefit. This is justified if economy be understood to mean not less spending but less wasting. But even the present extensive spending may certainly be increased to the benefit of the community, if it is for purposes definitely relating to the general welfare and happiness of the people. The contention that money spent for government, or invested in municipal or state bonds, is not "productive" so often advanced in recent discussions of taxation, is quite without foundation unless one adopts the definition that an investment is productive only if it creates profits for private persons. Certainly it is absurd to call a privately owned power company productive and a municipal power company unproductive. The public school system has caused taxes to go up, yet few of us regret it. State and local government expenditures can hardly be reduced except by eliminating waste; the purposes of the expenditures are usually too essential. But the record of Federal expenditures, with the enormous war bills incurred, is indeed discouraging, and those who clamor for lower taxes had best turn their efforts toward universal peace or at least reduction of armaments.

Government Income

Once the amount which is to be expended by a government is determined, the question of the method of obtaining it must be met. Through its system of taxation a government can greatly alter the original distribution of the national income between labor and ownership. It may levy its income from one group or the other; it may put the burden on farmers more than on manufacturers; it may even put the burden of taxation on unmarried men in order to raise the marriage and birth rates. In fact, taxation invests government with a tremendous power of social control.

There are six general types of government revenue in addition to taxes—gifts, prices, expropriations, fines and penalties, fees and licenses, and special assessments. *Gifts* to the government occur but seldom—they usually take the form of the building and endowment of institutions like asylums, hospitals, schools, public libraries, etc. *Prices* are received by the government as payment for goods or services which the government sells. The third source of revenue is from *expropriation,*—the condemning of property. The government must pay a "fair" return, as determined by the courts, for any land it so condemns. The income from *fines and penalties* rarely meets the expenses of maintaining police services.

Fees and Licenses

Fees and licenses are payments made by an individual for some special service performed by the government to him, which the government performs for the general welfare. For example, the government in requiring registration of dogs is acting for the general welfare but the individuals must pay who receive the special benefit.

Special Assessments

Special assessments are charges made by the government against a group of individuals who have been specially benefited by some deed of the government. This appears chiefly in connection with the building of roads, paving of streets, lay-ing of sewers and water mains, development of irrigation projects, and other additions or improvements. In all such cases the improvement increases the value of the property in the neighborhood. It is therefore considered just that the owners benefited should bear the cost, although the assessment must never exceed the benefit. This method has proved most satisfactory as a check upon unnecessary expenditures, yet does not retard desirable improvements, as happens when taxpayers who will not be benefited, are forced to bear a large part of the burden.

Taxes

Taxes are the greatest source of government income. They are levied without respect to person or special benefits conferred. Payment is compulsory. In some cases revenue may be applied to some specified purpose, as a school tax or a levy for the soldiers' bonus. These are known as *special taxes.* More often the revenue is placed in a general fund and is distributed among the expenditures of the government without regard to its source.

The following table shows the more important kinds of taxes collected in 1922 reported by the Census Bureau (figures are in millions of dollars):

	Total	*Federal*	*State*	*County*	*Incorporated Places*	*Minor Civil Divisions*
General Property	3,321	....	348	687	1,345	941
Poll	29	....	8	9	7	4
Income	1,751	1,689	29	1	30	2
Inheritance	195	127	66	...	1	...
Customs	562	562	...	...	....	...

This table very clearly indicates the difference in tax methods employed by the different branches of the government. State and local revenues are almost entirely the product of general property taxes, while the Federal government depends upon the income tax, customs duty, and excise duties in the main.

General Property Tax

The general property tax, traditionally the source of revenue for states and municipalities, is based upon the principle that each property owner shall pay at a given rate upon the value of the property, as determined by public assessors. In some places real estate alone is taxed, in others personal property is taxed as well. The property tax represented an advance over the poll tax, in which every person paid an equal amount, in that it is based upon the principle that persons should pay according to the value of their holdings. For simplicity this tax is ideal. After the budget is framed and the total value of all assessments is determined, one simple operation of division gives the rate of taxation—and all pay at the same rate. A further advantage of the property tax is that, at least for real estate, it cannot be evaded. On the other hand, difficulties lie in obtaining fair assessments, and in the possibility that the taxpayer may not have ready money available for taxes even though owning property. A piece of property may not bring in any income, in which case he must either pay the tax out of other funds, or sell the property to meet the tax.

Income Tax

The income tax is a payment by the individual based upon his net income during the year. In this country, the rates of the income tax increase as the amount of income increases; the larger the income the greater the proportion taken by the government. The income tax represents a decided advance in taxation theory. If levied as the property tax is levied, the rate of tax would remain constant and the amount paid would vary only as the income varied. But a new principle is introduced when the rate is no longer uniform but *progressive*. The principle underlying this scheme of taxation is that taxes should be paid according to the ability of the individual to pay. Larger incomes must be shared more with the government than smaller ones.

Though sound in theory, the income tax has proved to have many difficulties in interpretation and operation. It is only as these are cleared away and the definition of such terms as income, depreciation and expenses are made clear that the tax can be most effective. American experience is as yet too brief to indicate the extent of evasion and the situation is confused by the unfortunate issuance of many tax-exempt bonds by states and municipalities. In countries in which the income tax has been in operation for a longer time it has proved a most satisfactory form of taxation.

Inheritance Taxes

Inheritance taxes are levied by the Federal government and many state governments, though the rates in both cases are much below those in many European countries. Generally, the rate of taxation increases as the amount of the inheritance increases. Also, the more distant the relationship of the person inheriting to the deceased, the higher the rates. In theory the inheritance tax is an income tax and may be justified on the same grounds. Furthermore, it is argued that inheritances represent an unjust distribution of wealth, in that the recipient is determined by the accident of birth rather than by worth. It offers perhaps the most satisfactory field now evident for the increase of government revenue in this country.

Customs Duties

Tariff legislation was first enacted in the United States in 1789. It has been a bone of contention ever since. The revenue from the tariff has always been one of the chief sources of income of the Federal government. In 1910 nearly half the total revenue was from customs duties. In 1920 it was less than one-twentieth, owing to the enormous increase in government expenditures and the introduction of the income tax.

Many arguments have been advanced for and against a protective tariff. The principal ones, with a brief discussion of each, are here summarized:

For a Tariff

1. The *revenue* argument. Customs returns are large and easily collected. But it must be remembered that they are irregular, and not paid by the foreigner necessarily but are often shifted to the consumer.

2. The *infant industries* argument. As a means of assisting a new industry to develop and reach a point where it can compete with older

foreign competitors the tariff is a valiant protector. In any newly developing country, this is a weighty factor.

3. The *war* argument. A tariff, by hindering foreign trade, makes a country more nearly self-supporting and therefore better prepared for war. It is also argued that a tariff makes for national unity.

4. The *wages* argument. The tariff enables producers to keep prices up and therefore keep wages high. Imported goods made by cheap labor would cut wage levels. On the other hand, it must be remembered that expensive goods are just as undesirable to the wage earner as low wages. It is probable that with a very few exceptions the tariff is a relatively unimportant factor in wage determination.

Against a Tariff

1. The *balance of trade* argument. Since exports and imports must be equal, any factor limiting imports will also limit exports. The truth of the first statement is demonstrated in the following chapter.

2. The *geographical specialization* argument. Just as it is most efficient for each individual to do all that which he can do best, and hire others to do that which he cannot do so well, it is best

for nations to produce the things for which they are best fitted and exchange them in foreign trade rather than to endeavor to produce all things, even those for which they have poor facilities.

3. The *equality* argument. The tariff benefits those who are protected, namely, the manufacturing interests. It raises the price of manufactured goods, which hurts the farmer. It is therefore an act of special privilege. It is interesting to note that the Republican Party, which represents the manufacturing interests of the country, is in favor of protection, while the Democratic Party, which represents the farmers, particularly the cotton growers, is historically in favor of free trade.

Government Borrowing

Governments show a surplus seldom and deficits often. This is caused sometimes by an inaccurate estimation of the yield of taxes; if so, the deficit can easily be made up the next year. There are two other conditions likely to strain a government exchequer and produce deficits—war and ambitious public improvements. If there is war, governments customarily finance themselves by large issues of bonds. The actual expense of the war is met therefore by capital which individuals have loaned to the government. This means that the immediate expense is met by persons having available funds, to be repaid later by the government with funds obtained through taxation levied on the whole community gradually and at a more convenient time.

If there are public improvements to be financed, it is often much easier for a government to borrow from some capitalist who has surplus funds to loan, and then collect from the whole citizenry gradually, and repay the capitalist after an interval than it is to impose a large tax sufficient to meet the entire cost at the time of actual construction. Such expenditure has increased markedly in the last ten years, owing to the entrance of municipal governments into the field of public utilities, the need for roads, and the strong demand for well-equipped school buildings. A further incentive to financing such projects with bonds rather than immediate taxation is the fact that interest on state and local government bonds is exempt from the Federal income tax, and such bonds can therefore be issued at a much lower rate of interest than other bonds. In the last five years, we have seen the Federal government paying off its debt at the rate of half a billion dollars a year while states and municipalities have been floating larger and larger bond issues. The ultimate result will necessarily be a gradual decrease in Federal taxes but a steady increase in local rates.

An excellent analysis of government expenditures is contained in a report of the National Industrial Conference Board entitled, *The Cost of Government.* There are very few good books on government finance, perhaps the best being Carl C. Plehn's *Introduction to Public Finance.* An elaborate examination of one small phase is found in *The Taxation of Inheritance,* by William J. Shultz. The numerous volumes bearing the authorship of E. R. A. Seligman cover the field of taxation with great minuteness. For the tariff, Frank W. Taussig's *Tariff History of the United States* is the authority. If one can maintain an attitude of intelligent skepticism, then Andrew Mellon's *Taxation, the People's Business* affords an excellent starting point.

CHAPTER XVI

MARKETING AND FOREIGN TRADE

IN THE last three chapters we have been considering the channels through which money income is distributed among individuals. It is equally essential to trace the movement of commodities after they leave the producer. As a result of modern specialization and large-scale production the problems involved in satisfactory and inexpensive distribution have become exceedingly important. Our very lives, indeed, depend upon the continual flow of commodities from producer to consumer.

Extent of Trade

The National Bureau of Economic Research estimates that on December 31, 1921, the number of individuals in the United States engaged in mercantile pursuits was 4,728,000, or one-ninth of the working population. Many other workers, like railroad employes, are indirectly engaged in distribution. The rapid growth in this form of economic activity is shown by the fact that in the last forty years the number of wholesale and retail dealers has multiplied threefold and the number of salesmen and saleswomen thirty-five times. Many occupations, such as window-dressing, were not even known a few years ago.

It is customary to divide persons active in distributing commodities into two groups—wholesalers and retailers. Distribution may sometimes be direct from producer to consumer, but more often there are middlemen. In many cases more than one middleman have control of the product before it reaches the retailer.

Direct Selling

Some producers attempt to distribute their products to the consumer themselves. This is seldom true of farmers, but some few manufacturers create such contacts. More often the producer sells directly to the retailer, thus eliminating the expense of dealing with other middlemen. A closer relationship between production and distribution is represented by combinations of factories and retail stores, owned by the same interests. In some cases the stores are in effect selling agencies for the factory, examples being found in certain shoe stores and candy stores which handle only their own brand of shoes or candy. Some large concerns, organized primarily for retailing, have factories to produce some of the goods they handle.

One system of chain stores operates several factories manufacturing bluing. A certain large mail order house maintains separate plants manufacturing wall paper, paint, agricultural implements, pianos, saws, cameras, stoves and wooden building fixtures. The development of large retailing units is making such a direct connection between manufacturing and retailing more feasible than ever, while the size of many manufacturing enterprises necessitates elaborate selling machinery.

Advertising

The size of markets to-day and the vast number of competing firms and products have forced the business man to summon aid in persuading the consumer to purchase his goods. Advertising is the process of selling to crowds rather than to individuals. A salesman talks to one person at a time, an advertiser reaches a large number with one appeal. Advertising attempts to sell the product by informing or reminding the prospective purchaser of its existence and by presenting arguments or inducements designed to persuade the potential buyer to become an actual buyer.

Advertising has undergone a great change in recent years. It has become a skilled undertaking and a specialized industry. The form which the advertisement shall take is given very careful consideration. The modern researches into psychology have been given practical application in the advertising field. The reactions of individuals to the use of colors, the extent and type of pictorial matter, the amount and nature of reading matter, the pattern of the advertisement and its placing have all been the subject of careful study.

The organization of large companies which act as advertising agents for business houses has been a notable feature in the growth of this field. These concerns receive a definite sum from the business man and in return take complete charge of his advertising, making all the arrangements for its presentation to the public and often preparing the material as well.

The Valu of Advertisin

The great amount spent on advertising presumes a belief on the part of those who spend it that they derive some benefits. There can be little doubt that in many lines advertising swells the volume of sales. It is also true that a firm which faces severe competition cannot afford to cut down its advertising as long as its competitors maintain theirs. Under competitive conditions manufacturers are often forced to advertise whether they desire to do so or not.

Aside from the fact that individual concerns must advertise to survive in competition and that by means of it a business man may increase his profits, advertising must be judged in terms of its social value. Two arguments are usually cited to justify advertising in terms of social welfare. The first is that by means of advertising the manufacturer increases his sales and by increasing his sales he is enabled to produce on a larger scale and therefore more cheaply. Consequently the consumer pays a lower price. This is undoubtedly desirable, but it does not always work out that way. In many cases the economy of large scale production does not offset the cost of advertising, and in many more cases, if there is a saving, some one other than the consumer pockets it.

The second justification is that advertising provides a means of introducing a new product, of informing people of products which they really need but do not know about, and of informing buyers when and where to buy more cheaply. This is undoubtedly a service, but it is also true that skillful advertising often creates artificial demands that result in wasteful buying and that other methods of publicity, inherently less biased, might be found.

Certain advertising may be defended, but on the whole it may be said that from the social point of view much of it is sheer waste. Much advertising is a positive evil, for the glowing and incomplete descriptions of the products concerned do not give the consumer a rational basis for selection. An advertisement does not represent a scientific or even detached judgment on the product. It is the statement of a salesman trying to persuade the purchaser to buy that article rather than some other which may, as a matter of fact, be much better and would be so recognized if it were not for the misleading descriptions of the first.

Storage

One of the most valuable services which the middleman performs is to make provision for the temporary inequalities in production and consumption. Such inequalities are the result of two conditions. First, production may be irregular and consumption regular. The consumption of butter is fairly regular throughout the year, while its production is concentrated in the summer months. The dairy often neither desires nor has the facilities to store the surplus summer production. The middleman purchases it, places it in cold storage and withdraws it when he can sell it advantageously. There is a similar situation in cotton. Cotton ginning is done between September and December. The farmers sell most of their year's yield at that time, yet the cotton manufacturers consume the crop at an even rate throughout the year. The middleman holds a large part of the crop in the warehouse in the period between December and September.

The opposite situation is found in the case of products whose sale by the retailer is not so regular as their production. The sales of retailers are often subject to violent seasonal variations. A study by the Harvard Bureau of Business Research of the business of jewelry stores showed that one-fifth of the year's sales were made in December. Although production will to some degree adjust itself to these irregularities, the retailer and wholesaler must accumulate stocks to prepare for the rush of business when it comes.

Criticism of Middlemen

No individual in our economic organization is more often subject to attack than the middleman, yet the functions he fulfills are essential. Someone must assemble goods, hold them until the proper time for marketing, and then bring them to the proper place for marketing. Although the middleman does not change the form of goods, his function is as important in a highly specialized community as the original producer's.

Criticism has hinged chiefly on the belief that the middleman receives too large a share in distribution. According to carefully collected figures compiled for various basic lines such as groceries, shoes and jewelry by the Harvard Bureau of Business Research, the retailer's share in the total cost of the commodity to the consumer is about 20 per cent and the wholesaler's 10 per cent. In certain lines such as furniture the share of both is doubtless higher, while in others, with rapid turnover, it may be lower.

Some idea of the share which various persons get from the cost of a barrel of wheat flour is given in the following figures taken from an elaborate survey made by the Federal Trade Commission:

	One Barrel of Flour or Its Equivalent	
	1913-14	1917-18
Farmer's price.....	$3.50	$ 9.10
Miller's price.....	4.15	10.22
Wholesaler's price.	4.22	10.53
Retailer's price....	5.76	12.54

Source: U. S. Federal Trade Commission, *Report on Commercial Wheat Flour Milling.* Washington, 1920.

These quotations were taken in Minneapolis and Kansas City, so that no cost of transportation would enter.

These figures show the part of the consumer's dollar that goes to the middleman. In return the middleman performs many useful services, involving considerable cost. This branch of economic activity has undoubtedly grown more rapidly than any other in the last twenty years. There is no reason to believe it has yet reached its highest efficiency. Our attention has been directed more often to the problems of production, but the problems of efficient and cheap distribution have yet to be solved.

Foreign Trade

Marketing is not only a matter of local distribution. The political boundaries of a country are not necessarily its economic boundaries as well. In the desire to make profits, individuals who discover that goods can be sold at higher prices or bought at lower prices in another country will, barring restriction, trade with that country. Since this situation is not infrequent, foreign trade is a normal consequence.

In 1919 the United States exported about one-tenth of all its products and imported about one-half as much—both proportions representing dollar values. The various products which are included in this total, enter into foreign trade in quite different degrees. Certain industries require raw materials not found in this country—tin, silk, rubber, coffee, mahogany, and spices. On the other hand, the United States produces more cereal products than it requires and the surplus is exported. For the years 1909-13, about one-seventh of the wheat crop was exported, for 1921-25, over one-half. Agricultural products constitute a very large proportion of our exports.

The Law of Reciprocity

The basic law of foreign trade is that a country's imports and exports must in the long run be equal in value. There is no international money. National currencies are legal tender only within the boundaries of the nation issuing them and gold is only a commodity in foreign trade. Trade between countries is therefore similar to the transactions of bartering. Unless a man accept the goods of some other person he cannot obtain payment for his own. Each can take only as much as he gives, for he has no means of paying except by selling; each can sell only as much as he buys, for he can get no payment except by taking goods in exchange. Just as the purchases and sales of any individual who trades by barter will always be equal, so the imports and exports of any country are equal.

If the imports of a country exceed its exports for a period, it will then be in debt to creditors in another country. Credit may be extended, but this merely delays the payment. Since the money of the debtor country is not legal tender and has no value in foreign countries, the debt cannot be paid by that. The only method by which, in the last analysis, the nation can pay its debt is by a shipment of commodities—bearing in mind again that gold in foreign trade is a commodity and not money. Such a shipment brings about once more equilibrium between imports and exports.

There is no necessity, however, that the imports and exports between any two countries be equal. If Brazil sends more goods to the United States than it receives and buys more from England than it sends, it can tell the English merchants to collect from the American merchants and thus discharge its obligations. The essential point is that the total of Brazil's exports to all countries must, in the long run, equal the total of its imports from all countries.

Invisible Exports and Imports

The theory just propounded may appear to be contrary to fact. Since 1893 American exports have exceeded imports in every year. But the theory is not based on the customs house records alone. *All* exports and imports must be calculated. In addition to the figures for merchandise certain "invisible" items must be considered:

1. Credit extension. This permits one country to purchase goods in another without making immediate payment. Since an ultimate payment must be made, it results in merely a temporary inequality between exports and imports.

2. Interest and capital payments. Many countries have large investments in other lands or own foreign securities. When interest or capital payments are made on such investments they give the country which has advanced the capital claims to ownership in the debtor country. A country in which foreign capital is invested will be compelled therefore to ship goods abroad in order to pay the interest charges.

3. Shipping. When goods are carried for persons in one country by vessels of another country the payment for these services often enters into the trade balance. Likewise, when vessels of one nationality obtain coal and supplies in a foreign port, they must be paid for by exports from the native land of the purchasing ship.

4. Marine insurance. England is the headquarters of most marine and shipping insurance and therefore receives goods and services as payment.

5. Tourists' expenditures. Tourists in foreign

countries consume goods and services. Since their wealth is in the form of ownership in their native lands it is necessary to make some exchange in order that they may be enabled to purchase in the foreign country. The situation is exactly the same as if they had stayed at home and the goods had been shipped to them.

6. Immigrants' remittances. Many immigrants send back remittances to their native lands. These money orders permit citizens of foreign countries to buy goods, which Americans must pay for.

7. Payments made to agents, diplomatic representatives and other persons in foreign countries for services rendered.

When these and other forms of invisible imports and exports are taken into calculation the equality of imports and exports for any country can be statistically established.

Effects of Foreign Trade

There are three social effects of foreign trade which must be noted. In the first place, foreign trade is a very important factor in the spread of culture. It provides an opportunity for intercourse between countries and ultimately results in the exchange of ideas as well as goods.

In the second place, foreign trade has given rise to what is sometimes called economic imperialism.

To a considerable degree rich nations have sent capital and enterprise to new lands in order to exploit their natural resources. This has been especially true in connection with coal and oil. The endeavor to obtain concessions, privileges, and control in foreign countries has led to much international rivalry and is without doubt one of the greatest causes of war.

In the third place, trade between established countries, each recognizing the economic independence of the other, cannot but have a strong influence on the preservation of international peace. Not only is the selfish desire to continue trading without the interruptions which war causes, of some influence as a motive to prevent war, but the relationships which grow up through trade cannot help but make for international understanding and co-operation.

For marketing, see Paul Nystrom's *The Economics of Retailing,* and for advertising, *The Principles of Advertising,* by Daniel Starch. It might also be well to examine some of the numerous trade journals, which are usually filled with articles dealing chiefly with marketing problems. The scandals of advertising are gleefully described in Stuart Chase's *Our Money's Worth.* For a detailed analysis of the principles of foreign trade, see S. Litman, *Essentials of International Trade.* Each year, the Bureau of Foreign and Domestic Commerce publishes a report of the Trade Balance, in which estimates are made for the various invisible items. See Clive Day's *History of Commerce.*

PART FIVE

THE INSTITUTION OF BUSINESS ENTERPRISE

CHAPTER XVII

THE VITALIZER OF THE ECONOMIC SYSTEM

THE THREE economic institutions already discussed, deal with the organization of society for production, exchange and distribution. We have yet to consider the institution which puts life into the whole, the institution of business enterprise.

Business Enterpris

Business enterprise is the making of money, the securing of profits. Persons must have reasons for doing things. Individuals who organize and run business concerns must have some incentive. The chief incentive in our system is the desire for profits. The student was quite correct who was asked, "What is the purpose of a bank?" and answered, "To earn profits for the stockholders."

Economic enterprises might be owned by the government and run by appointed commissions; they might be run by committees of workers; they might be run by some elected despot. But in our economic system enterprises are owned and operated by individuals. Restrictions are few; in effect the owner may run his enterprise as he pleases. Since we permit individuals to own enterprises, according to the laws of private property, the fruit of their ownership belongs to them. This takes the form of profits and is the incentive which directs our economic organization. Where the profits are there will the enterprises go, and the business men.

Technical Efficiency

Profits may arise from two sources, technical efficiency and pecuniary strategy. Technical efficiency consists of the most effective use of the methods and means of production. Pecuniary strategy consists of the most effective manipulation of the prices and values in which the business man deals.

All business men desire technical efficiency. Their profits are the difference between the market price and the total of all costs of their product. Technical efficiency is only another name for low costs. The plant which operates at the lowest cost probably will show the biggest profit. Nevertheless, the business man's first consideration is no longer technical efficiency. In large enterprises the oversight of technical matters is delegated to trained engineers, superintendents and general managers. These men are paid large salaries to take charge of the actual production of commodities, the mechanical side of industry.

Pecuniary Strategy

It is in another field that the business man now concentrates his energies in order to reap the largest profit—the field of financial manipulation. Here he is concerned not so much with goods as with values. He searches for and even tries to create price differentials. He strives to control markets by means of agreements and combinations. He endeavors to obtain aid from the government through legislation, in tariffs and other forms. He organizes new concerns, borrows money, and floats huge issues of securities. He tries to win trade from his competitors by clever phrases and extensive advertising. He speculates in anticipated price changes and seeks for indications of changes in business activity. He strives to reduce costs when bargaining with his associates and his laborers. He searches for unclaimed natural resources and new processes which he may develop. In any of these sources the elusive profits may be lurking. The business man, the so-called captain of industry, is a specialist in such arts.

The business man, then, is concerned with the making of money, but society is concerned with the making of goods. In the case of technical efficiency the two coincide. The most money is made where goods are produced with the greatest economy of material and efficiency of methods. As it develops technical efficiency, the profit motive is in accord with social welfare. But in the case of financial strategy, it is hard to see any continuing relationship between the profits won and social welfare. The suppressing of a valuable patent is an illustration in point. Profits may represent only the income to a profiteer through his cleverness in business organization and manipulation rather than a reward for success in making something of better quality than the product of his competitor or something of as good quality at a lower price. On the other hand, profits may also represent well-deserved payment for developing a risky but desirable enterprise. There are obviously many kinds of profit and they cannot be judged as a whole.

Technical efficiency was discussed in detail in connection with the institution of machine technique. The more important phases of the financial side of business enterprise will be discussed in the four chapters following.

For a well-balanced statement of the role of profits, see Wesley Mitchell's *Business Cycles.* A more aggressive statement appears in Thorstein Veblen's *The Theory of Business Enterprise.* For stories of the incentive at its height, see *Chapters of Erie,* by C. F. and H. Adams, and Ida Tarbell, *History of the Standard Oil Company.* See also Foster and Catchings' *Profits* for a statement of the source and use of profits.

CHAPTER XVIII

TYPES OF INDUSTRIAL ORGANIZATION

THERE are a number of different ways in which business enterprises may be organized. The most important are: individual ownership, the partnership, the corporation, and the co-operative society. The business man must operate through one or another of these forms of organization.

Extent of Different Types

More establishments of the United States are operated by individuals than in any other way. The figures for 1919 for manufacturing concerns are as follows:

	Number of Establishments	*Per Cent*
Individuals	138,112	47.6
Corporations	91,517	31.5
All others	60,476	20.8
Total	290,105	100.0

These figures without further interpretation do not give an accurate picture. They must be supplemented by the following:

	Number of Employes	*Per Cent*
Individuals	623,469	4.0
Corporations	7,875,132	86.0
All others	597,771	10.0
Total	9,096,372	100.0

From these two tables it appears that although corporations number less than one-third of the establishments, they employ more than six-sevenths of the wage earners. Furthermore, they produce more than seven-eighths of the total value of all products. This situation is also found in the mining industries. But in agriculture, and until recently, in retail trade, the corporate form of organization has made little headway.

Individual Concerns

Nearly one-half of the manufacturing concerns in the country and the bulk of agricultural and mercantile enterprises are operated by individuals. These enterprises start usually without formality or legal permission. One person assumes all responsibility. In some cases, he may be required to obtain a license, as in restaurants, or pass examinations, as with doctors and lawyers.

In such a concern, control is concentrated in the hands of one person. This saves much red tape and routine, and is desirable where the business is one which cannot be systematized. The fact that the business rests on one individual, however, limits it in many respects. The most direct limitation is in the amount of money which a single person can borrow. It should be noted that, in case of failure, the individual is liable not only for the amount he has put into the business but to the extent of all his assets.

Individually-owned concerns are seldom long-lived. Beginning and ending their existence is an easy matter. Retail stores sometimes change hands several times in one year. The owner may sell out, the store may go bankrupt, or, more happily, it may grow into a corporation or partnership.

Partnerships

When one man finds that he cannot satisfy his business ambitions alone, one way out is to take one or more partners into his business. Each partner invests a certain sum, not necessarily equal in amount, and a contract is signed, which is legally binding. This definitely states the purposes of the organization and the rights and duties of the partners.

Although the exact nature of the partnership may vary according to the conditions of the contract, certain advantages are common to all. A partnership puts at the disposal of the business a larger amount of capital than any one partner could advance alone. Each partner is liable for the entire debt of the firm. If the firm runs heavily into debt, the creditors may collect all that is owed from any of the partners. Obviously, such a condition necessitates the greatest care in selecting partners, and prevents the formation of partnerships with many members.

Since each partnership is based upon a contract between several persons, it automatically ends when one member withdraws or dies. If the business is to continue a new partnership must be formed. Partnerships are found chiefly in mercantile undertakings, small manufacturing concerns and in the professions, especially the law.

Corporations

In recent years, a new form of business organization has greatly overshadowed all others. Upon request of a prescribed number of individuals and the passing of certain formalities, a state government creates a corporation. This corporation is legally an individual, behaving in the eyes of the law as if it were a person. It may commit a crime, may be sued for damages, and the like. The capital, or money with which it begins business, is supplied by persons who receive shares, commonly called stock, in exchange for a sum invested. The possession of these shares gives them a proportion of the total ownership in accordance with the relative amount of stock each owns. The owners of shares elect directors who guide and operate the business. The policies of the corporation are determined by this board of directors. They presumably keep in close touch with the business, though generally engaging competent individuals to make and carry out decisions of minor importance.

The corporation differs vitally from the forms of business organization already discussed. In the first place, it is permanent. Its charter may run for a limited time but can usually be easily renewed. Ownership may be transferred from one person to another; even though all the original incorporators die, the corporation still lives. In the second place, the liability of each individual is limited. Quite different from the individual enterprise, or partnership, he may lose only what the share of stock has cost him. Beyond that he is not liable, no matter how much his corporation owes. One of the few exceptions to this rule is a national bank, in which each stockholder is liable for an additional sum equal to his original investment. In the third place, there is no limit to the amount of capital such a concern may obtain, if it can persuade persons to invest. It may issue stock and thereby gather capital from thousands of stockholders. This may all be done, however, without losing centralized control, vested in the directors.

The corporate form also has certain disadvantages. In the first place, it is difficult to fix responsibility. There are many persons partly responsible for anything that may be done. No one individual feels that concentrated responsibility which exists in the case of a single owner or a partner. In the second place, ownership is almost wholly separated from management. The firm is actually run by managers or engineers under salary. The owners are far away, many of them having no knowledge of the business, and little interest beyond the scale of dividend payments. In the eyes of the law, an act by the manager, such as entering an unlawful combination, is punished by fining the corporation. The distant stock-holders bear the burden for acts the responsibility for which is certainly far from theirs. In the third place, this "absentee ownership of capital" leaves the chief responsibility in the hands of a small group. There can be concentration of control in very few hands, despite widespread ownership. The corporation is operated in accordance with the mandates of the holders of a majority of the stock. The small stockholders, who may be many, have really no control. In the fourth place, any corporation is an impersonal organization. Loyalty or co-operation between employer and employed is difficult to stimulate. Perhaps the prejudice which so many persons feel against corporations is caused by their impersonality.

Incorporation may be used as a method whereby an energetic promoter can obtain money from individuals without pledging himself that they will receive any return. In many corporations the stockholder has no intelligent understanding of the real activity of the enterprise of which he is part owner. On the other hand, he feels no responsibility since no one thinks of identifying him as one of the owners of the U. S. Steel Corporation unless he has a very large block of the stock. At the beginning of 1925 the U. S. Steel Corporation had 96,285 stockholders, the Pennsylvania Railroad 145,174 and the American Telephone and Telegraph Company 345,133. These figures represent large increases over the pre-war distribution of holdings.

Stocks

There are in general two classes of corporation securities, stocks and bonds. Stocks represent shares in the ownership of the business; bonds represent loans to the corporation.

Stocks are of two kinds, *common* and *preferred.* All corporations have common stock, some have preferred. These stocks correspond to an investment in the concern. A person owning one-quarter of the stock owns one-quarter of the business.

When profits are distributed among stockholders they are called dividends. The owner of preferred stock must receive his dividends first, but only up to some previously stated amount, say, for example, 6 per cent. When profits remain after the preferred stock has received its dividend, they may be distributed to the common stock holders if the directors so decide. In some corporations the dividends on common stock vary considerably from time to time, in others reserves are created in prosperous times so that a steady rate of payment can be maintained. The directors may decide that it is necessary to construct a new building, or take out additional insurance, or build up a reserve fund; they will then withhold dividends even though the money is available. On the other hand, sometimes when a concern has accumulated a large sum in undivided profits, the directors "cut a melon", or declare a special dividend.

Preferred stock is sometimes "cumulative", which means that if the concern is unable to pay a dividend at the regular date, usually every three months, it must make up that payment before any dividends can be paid on common stock. So, if no dividends have been paid on 6 per cent cumulative preferred stock for three years, the holders of that stock must receive 18 per cent before the holders of common stock receive anything.

Common stock generally carries voting power in the management of the corporation, preferred stock only occasionally. A recent development in corporation finance is to divide the common stock into two classes, for example, Class A and Class B stock, giving voting power to only one class,—a method for keeping control in the hands of a small group without compelling them to own a majority of the whole common issue. But normally each share of common stock has one vote. In some few exceptions, notably co-operative societies and credit unions, each shareholder is entitled to one vote regardless of the size of his holdings.

The value of stocks changes with the probability of the payment of large or small dividends. The value of the shares of a corporation not able to pay dividends naturally falls. Also, because stocks are only one of many possible ways to invest money, the general condition of the money market influences the price. If men can make more by investing in other branches of the money market—in bonds, real estate, or foreign exchange

—or if money is needed elsewhere, as in the banks or by business men directly as loans, then the stock market will suffer and prices fall.

Sometimes corporations declare stock dividends, giving more shares of stock to persons already stockholders. Suppose a corporation, for example, has been prosperous and is paying 12 per cent on one thousand shares having a par value of $100. Because of taxes, or public opinion, or for some other reason, it may declare a stock dividend, giving each stockholder two shares having par value of $100 each instead of the one he had. The stockholder who originally owned one-thousandth of the company now owns two-two-thousandths, which leaves him in exactly the same status. And the market value of the two shares combined will be equal to the value of one share before. No new value has been created. But the corporation in sending the stockholder $12 now sends 6 per cent on two shares rather than 12 per cent on one as before.

Bonds

Bonds are issued by corporations which wish to borrow money. They are promises by a corporation to pay a given amount of interest and redeem the original sum of the debt on a given date. Bonds are therefore subdivisions of a large loan, issued in convenient denominations so that they can be easily bought and sold. This method of borrowing is resorted to because large projects, like railroads, must borrow in such large amounts that no one person or bank could finance the loan, so that it must be spread among many lenders.

Bonds may have as security, specific assets of the corporation. Railroad bonds are often secured by definite sections of the roadbed. Other bonds are issued against collateral, that is, against other stocks and bonds. Finally, many bond issues, called debentures, are merely general claims against the corporation.

Bonds pay a definite rate of interest. Failure to pay interest on its bonds makes a corporation liable to bankruptcy proceedings—stockholders, it should be noted, can never take any action if dividends are not paid except to elect new and more generous directors. Because the amount of return on bonds is definitely fixed their value does not fluctuate as widely as that of stocks. However, they are affected by changes in their safety, and by the other demands and opportunities in the money market for investment funds.

Stock Exchange

In the United States no commodity market is so completely organized as the market for stocks and bonds. The New York Stock Exchange and similar exchanges in other cities have devised an elaborate system for the rapid transaction of business. The sales of stock in the New York Stock Exchange alone often exceed 2,000,000 shares per day. Buying and selling on the Exchange is restricted to members. These members, or brokers, make purchases or sales for their customers, receiving a stipulated commission for the service. A large part of these purchases and sales represent attempts by individuals to find a profit in a rapid turn-over of stocks. Persons who are eager for prices to rise, are called "bulls," and those eager for prices to fall, are called "bears." But the large operators on the stock exchange are prone to designate the members of the general public who participate there, as "suckers".

Accounting

From time to time corporations issue statements concerning their activities which are called balance sheets. In their statements the assets and liabilities of the company are carefully listed. But to understand the affairs of a corporation more than the accounting statement must be considered. For example, the writer once attempted to analyze the profits of coal mining companies from the balance sheets. In the case of one company he found a loss for several years, until the company showed a deficit of $2,000,000. The balance sheet at the end of the following year showed a net profit on the books of $500,000. No change had taken place in the actual earnings of the company, but the accountant had revalued the coal lands which were covered in the statement. He suddenly increased their value by nearly $3,000,000, thus arbitrarily increasing the figure of the investment and making what had appeared as a loss, now stand on the books as a profit. It is because of such conditions and practices that one interested in analyzing accounts must never rely too much on bare balance sheets and profit and loss statements.

Co-operative Societies

Co-operative societies are organizations formed by a group of producers or consumers for joint economic action. The most important types are societies for co-operative handling and marketing of products, societies for co-operative buying and societies for co-operative credit.

The societies for co-operative handling and marketing of products are in many cases, well known. In 1925 the United States Department of Agriculture reported that there were 10,803 such societies, grouped as follows:

Industry	*Number of Societies*
Grain	3,338
Dairy products	2,197
Livestock	1,770
Fruits and vegetables	1,237
Cotton and cotton products	121
Tobacco	24
All others	2,116
Total	10,803

The estimated membership of these organizations is 2,450,000 farmers. These organizations are engaged in providing elevators and storehouses, shipping, advertising, and the actual marketing of products. The farmer is generally far from the market, unacquainted with market conditions, and unable to sell his product to his best advantage. By organizing co-operative societies, he is able to reduce the expense of selling his crop, as well as to do it more conveniently.

The United States Department of Agriculture reports 1,217 societies among farmers for co-operative purchasing. These include general purchasing associations, co-operative stores, lumber yards, fuel yards and the like. Their purpose is twofold: they save by purchasing in large quantities; and they avoid the necessity of paying a profit to middlemen. They must meet the costs of their enterprise but they can keep the profits in their own pockets.

The co-operative credit societies most often take the form of building and loan associations. There were 10,000 such organizations in the United States in 1923, with a membership of nearly seven million persons. Their assets were $3,342,000,000.

The co-operative movement has not made so rapid an advance in this country as in Europe. The lack of experience among the members and their failure to select competent managers have hindered their expansion. Recent legislation has encouraged the formation of co-operative organizations and the Department of Agriculture openly supports the movement.

A statement of the trend in form of business organization appears in Willard L. Thorp's *Integration of Industrial Operation*. For details concerning corporation finance, see the elaborate five-volume series of A. Dewing, *The Financial Policy of Corporations,* or Charles W. Gerstenberg's *Financial Organization and Management of Business*. The actual operation of the stock exchange is ably described by its economist, J. Edward Meeker, in *The Work of the Stock Exchange*. See Dreiser's *The Financier,* and the novels of Garet Garrett and Edwin Lefevre. Finally, for corporation records and stock prices, examine the material provided by the Standard Statistics Company, or the Harvard Economic Service.

CHAPTER XIX

INDUSTRIAL COMBINATIONS

IN THE previous chapter the organization of single business concerns was discussed. We must go deeper, and consider combinations among single enterprises.

There are four main reasons for the success of industrial combinations:

Reasons for Combinations

1. The economy of large scale production.
2. The elimination of competitive expense.
3. The internal control of preliminary or subsidiary processes.
4. The ability to control output and prices within some market.

The first cause, economy of large scale production, can usually be realized in the enlargement of a single factory. The saving created by large combinations is mainly in purchasing, marketing, and financing. The second cause, the elimination of competitive expense when the possibility of price-fixing is not considered, consists for the most part in the reduction of advertising and other selling costs. Neither of these factors is of primary importance in explaining our largest combinations.

The desire to control preliminary or subsidiary processes has resulted in the formation of many "vertical" combinations. Such a combination exists when the firms involved are not all competitors selling in the same market but represent different steps or processes in industry. Vertical combinations are very numerous, particularly in the iron and steel industry. A combination of iron mines, coke furnaces, blast furnaces, steel rail mills and tin plate mills is such a vertical combination. "Diagonal" combinations are those which extend to the manufacture of by-products, joint products, or the use of similar processes on different materials.

Such industrial combinations accomplish the desire of business men to create an organization as nearly as possible independent of other business concerns. The integration—a word borrowed from mathematics and meaning the combining of many small units into one whole—may reach beyond manufacturing, as in the case of newspapers which not only make their own paper, but also their wood pulp and even do their own lumbering.

The fourth cause, the desire to control output and prices within a given market, has been the motive behind most of the notorious business combinations. These are commercial alliances of firms which would otherwise compete in the same market. This type is called a "horizontal" combination because it draws its members from the same level of industrial activity. Investigations have revealed a number of instances where markets have been completely dominated by such combinations.

In general, industrial combinations have been built up by five different methods:

1. Simple agreements.
2. Pools.
3. Trusts proper.
4. Holding companies.
5. Outright consolidations.

Simple Agreements

The so-called gentlemen's agreement is perhaps the simplest form of industrial combination. Various operators agree on a common policy with regard to prices, production, labor, or any other matter of common concern. No papers are signed; the agreement is quite informal. While this informality has the advantage of making the agreement difficult to detect, it also causes success or failure to depend upon the extent to which members will abide by their informal pledges. Such combinations existed in earlier years in the iron and steel industry and among anthracite coal operators. Since the failure of any one member to keep the agreement destroyed the whole arrangement, none of these combinations was long-lived.

Pools

A pool is a more definitely organized form of combination in which the members give over certain powers to a central organization. Pooling agreements were not legal, could not be enforced by law, and were therefore dependent on the good faith of the members. The Sherman Anti-Trust Law in 1890 made pools illegal, and new devices were needed to make combinations feasible.

Trusts Proper

The first "trust" was formed in 1879: the Standard Oil Company. This scheme provided for the operation of the firms concerned by a group of trustees. The stockholders in each company entering the combination turned over to these trustees their stock and received "trust certificates" in return. The trustees held the stock in the original companies and the original owners held stock in the trustees. The latter were given the power to operate the concerns, declare dividends, etc. Trusts were formed in the cottonseed oil, linseed oil, whisky, sugar, lead, petroleum, cordage, and other industries.

In June, 1890, the New York State Circuit Court of Appeals declared the North River Sugar Refining Company, a "trust," to be illegal. The argument against this form of organization declared that a corporation must be controlled by its directors in the interests of its stockholders and that therefore they could not delegate their powers to trustees or serve others than their own stockholders. As a result of this decision the various trusts were gradually dissolved.

Holding Companies

After the device of vesting power in trustees had been judged illegal a new form of combination appeared. It was called the holding company. A holding company is a corporation whose declared function is to own all or a majority of the stock in the companies which are to be combined. Its charter presumably states that it was organized for this purpose. The form of organization was certainly legal—the holding company does that which the state created it to do. Many holding companies were formed, especially in New Jersey, where the laws were most favorable. The discovery that even this manoeuvre did not protect monopoly came in 1904, when the United States Supreme

Court (Northern Securities Co. vs. United States, 193 U. S. 197) declared that although the form might be perfectly legal, it could not serve to cloak a purpose which was illegal. Holding companies were formed by railroads, and cottonseed oil, steel, tobacco, gunpowder, whisky, and other industries.

Outright Consolidation

By this time experience at law had shown that the form the combination took had little to do with whether it would be found legal or illegal by the courts. Consequently all attempts to conceal the nature of the project were abandoned and outright consolidations were made. These large corporations were organized by merging previously independent companies into a new enterprise. Sometimes some one corporation purchased a number of companies and dissolved them, merging their business with its own. Sometimes the companies bought up were allowed to continue as separate companies though owned by the corporation.

The Sherman Act

The first important Federal legislation dealing with industrial combinations was the Sherman Anti-Trust Act, passed in 1890. Just prior to that time many combinations had been organized, some of which had obtained a position of dominance in their respective fields. These caught the attention of thoughtful elements in the country and aroused public opinion. Since our economic order operates on the belief that prices, hence all business, must be governed by competition, these combinations, often resulting in monopolies, were widely regarded as dangerous to the country's welfare. The Sherman Act was passed to deal with the situation. Its eight sections may be summarized as follows:

1. Every contract, combination or conspiracy "in restraint of trade" in interstate or foreign commerce is illegal; a penalty is provided.
2. Monopolizing any part of interstate and foreign trade is a misdemeanor; penalties are provided.
3. The above sections shall also apply to territories of the United States and the District of Columbia.
4. Circuit courts shall have jurisdiction; district attorneys must enforce the law by instituting proceedings. The use of injunctions is permitted.
5. Witnesses may be summoned, etc.
6. In addition to other penalties, property in transit shall be forfeited.

7. Injured parties may sue for damages and receive triple damages plus costs.
8. The Act applies to corporations as well as individuals.

At first the law was practically inactive. Except for several minor cases, it was not until the Northern Securities case in 1904, which prevented a combination between the Northern Pacific and Great Northern Railways, that the law was brought into effective use. The interpretation of the Supreme Court was that "any restraint of trade", which was interpreted to mean any interference with free competition, was illegal. But in the Standard Oil case in 1911 the Court held that the "standard of reason" must be applied in judging what was interference with free competition. Since then the Act has been interpreted in terms of whether or not an *unreasonable* restraint of trade is being practised, thereby leaving the ultimate definition of the Act and its enforcement to the members of the Supreme Court.

Clayton Act

In 1914, after considerable agitation, two laws were passed designed to make more definite the meaning of the Sherman Act. The Clayton Act, with some qualifications, declares the following acts to be unfair competition; local price discrimination, tying contracts, holding companies, and interlocking directorates. The Act states the various methods of procedure to be followed when unlawful practices, as above described, are charged. It also contains a number of provisions directly affecting labor. These provisions are designed to meet the difficulty which had arisen in the Danbury Hatters' case, when a labor union had instituted a boycott, was declared by the courts to be in restraint of trade, and was ordered to pay triple damages. The Clayton Act declares that the antitrust laws shall not be interpreted to forbid or restrain unions or union members "from lawfully carrying out the legitimate objects thereof, nor shall such organizations be held . . . therefore, to be illegal combinations or conspiracies in restraint of trade." Since it still remains an unanswered question as to what the legitimate objects of unions are, or how they may be lawfully sought, this provision has not proved the protection to unions that was at first anticipated.

One of the weaknesses in the efforts of the government to regulate industrial combinations was the reliance upon district attorneys to begin actions, and bring offenders into court. They were already fully occupied and, besides, were not always eager to fight large corporations; their sympathies were not always in that direction. In 1914 the Federal Trade Commission was formed. Its primary purpose was to prevent rather than punish, to make rules for the game of business, and warn companies which seemed to be overstepping the bounds of fair competition. Its five members were to hold office for seven years and were appointed by the President, with the advice and consent of the Senate. The Commission was given powers of investigation and action to prevent unfair competition. These powers, it should be said, have been very much restricted by Supreme Court decisions.

The Federal Trade Commission

The Federal Trade Commission states its own purpose to be to protect the public against "(1) methods opposed to good morals because characterized by deception, bad faith, fraud, or oppression, and (2) methods regarded as against public policy because of dangerous tendency unduly to hinder competition or create monopoly."

The Federal Trade Commission may act on the complaint of some individual or merely on its own initiative. It employs a number of examiners, who look into the merits of all complaints made. The examiner must determine (a) whether the Federal

Trade Commission has jurisdiction, (b) whether unfair methods of competition were present, and (c) whether action would be in the interest of the public. If the examiner reports in favor of further action, the Commission makes a complaint, stating the charges and requiring the concern under investigation to file an answer. It is interesting to note that the burden of proof rests on the firm under charge—it must prove its innocence. After the reply has been received and studied, if there seems to be good reason for pressing the complaint, it goes to a Court of Review. If it passes this body as valid, it goes before the Commission for action. If the complaint still seems sound, an order is issued to the concern to "cease and desist." If the order is not obeyed, the Commission applies to a Federal Court for support.

Less than half the applications from the public asking for action are docketed. Up to June 30, 1923, more than three thousand applications were deemed worthy of further consideration and the Commission had issued a thousand formal complaints and five hundred orders to "cease and desist." Forty appeals have been made to the Courts for support and in a majority the Commission has been sustained.

There is much significance in the kinds of complaints made. Those entered during the year ending June 30, 1923, were as follows:

False and misleading advertising	58
Misbranding	8
Conspiracy to injure competition	3
Disparaging competitor's name or goods	3
Passing off of competitor's name or goods	11
Price fixing	10
Re-sale price maintenance	31
Bribery of customer's employes	2
Other charges, involving misrepresentations, coercion, combination to effect monopoly, price discrimination, and many other questionable practices	67

It is evident that the Federal Trade Commission is interested primarily in the *behavior* of business enterprises.

In many states there are anti-combination laws on similar lines. One interesting addition to Federal legislation on this subject is the Webb-Pomerene Act, passed in 1917, permitting combinations to be formed for carrying on foreign trade.

Difficulties of Restriction

In spite of various restrictions and an administrative agency like the Federal Trade Commission, the concentration of industrial control seems to be little checked. Many large corporations have been broken up but it is inevitable that costly competition gives way to co-operation. Competitors discover that neither is gaining and both are losing by the expense entailed in severe competition. It is very difficult to compel competition. The relationship between combined organizations may be invisible and intangible. Two men may have agreed long before that one will sell his product in New York exclusively and the other in Massachusetss. It is difficult to compel them to invade each other's fields. Moreover, the Federal Trade Commission is an appointive body, not necessarily capable, limited in power and handicapped by having to apply such vague terms as "unfair methods of competition" and "the interest of the public". Foreign countries, particularly Germany, have gone in exactly the opposite direction, encouraging the formation of large business units, called kartels, under strict government supervision.

For a discussion of the types of enterprises included in industrial combinations, see Willard L. Thorp's *Integration of Industrial Operation.* An excellent discussion of the historical and legal aspects of combination appears in Eliot Jones' *The Trust Problem.* For the scandal involved in particular cases, see the reports of the Bureau of Corporations, and the Federal Trade Commission, particularly the reports dealing with special investigations. Many of the indirect implications of combination are pictured in C. A. Gulick's *The Labor Policy of the United States Steel Corporation.*

CHAPTER XX

ELEMENTS OF RISK

EVERYTHING that we do involves the taking of a risk. Business life may be as hazardous as the more easily recognized forms of adventure. Any business concern, however lacking in physical body, is in constant danger. Against some dangers it may be able to guard itself, but others spring from causes beyond control. Business risks are of two kinds—material risks and value risks.

Material Risks

Material risks are those which threaten the destruction of actual goods. Fire may burn down the factory; a burst pipe may destroy machinery; a robber may make away with materials. Such risks are not peculiar to our form of economic organization. No matter who owns the factory or how it is operated, fires may occur. The concern may avoid pecuniary loss by insurance, but there is one less factory in the world nevertheless. The prevention of material losses of this sort is a matter of technical and political development. Fire extinguishers, safety valves, careful inspection, and the like are safeguards which may be evolved by thoughtful planning, but at best they can never guarantee immunity.

Value Risks

Value risks are the dangers of a decline in the exchange value of objects or of ownership rights. They are more distinctly within the scope of economics. Value risks do not necessarily coincide with material risks. The material risk of the factory burning down is not a value risk if the owner has it covered with insurance. It has even been shown that farmers can sometimes increase their profits if they are willing to destroy part of a crop, since the increase in price would more than offset the decrease in amount to be sold. The material loss would then be a value gain.

Value risks rise chiefly out of the price system. Production must be carried on according to a guess. Any individual who spends money or energy at one time and sells at another has to make a guess at what the price will be at that future time. Usually the experiment requires the expenditure of cash long before the product is ready for sale.

In making his guess as to the future price the producer must try to estimate what changes there will be in the general level of prices, what demand there will be for his specific product, and what quantities of it other producers will bring into the market. Because the amount which he will produce must be determined according to what are, at best, three estimates, the element of risk is almost sure to enter his business. By various methods, to be discussed later, much of the burden of risk may be shifted to other shoulders, but when prices change some one always gains and some one else loses. Regardless of the efficiency of production and the prudence and shrewdness of the producer's estimate, he may at any time lose his expected profit because of factors which change prices and which are beyond his control.

Speculation

In many lines the bearing of the risk of losses from changes in the price of a single commodity has become specialized into a separate activity. Certain individuals devote their entire energy to making estimates of the future course of prices. The process of buying and selling the same commodity in the same market and endeavoring to make a profit from the intervening changes in prices is called *speculation*. This is more widespread than is commonly believed. The retailer becomes a speculator when he lays in a large supply of goods in the belief that prices are going up.

There are many markets which are thoroughly organized, especially those dealing in food products. When the farmer's grain goes to an elevator the ownership is transferred to a broker on the exchange and may be bought directly by a flour manufacturer. Since grain comes into the market unevenly throughout the year, whereas it is consumed fairly regularly by the flour manufacturers, the ownership is often transferred to a speculator who holds it for a rise in price. When he is ready to sell it, it is returned to the market once more. All this time the grain has probably remained in the same elevator, but its ownership may have been transferred among many persons.

Such speculation, if properly carried out, is of value in fixing prices. If the speculator guesses correctly, not only will he be holding grain until it is most needed, as indicated by the high price, but he will be hastening the rise in price by holding it and furthermore will lessen the severity of the rise. On the other hand, if he guesses incorrectly, he will make the situation worse by taking grain from the market when the demand is greatest and selling it later when there is little demand.

He will have forced the price down below what it would have been naturally.

The speculator sometimes tries to bring about a change in prices in the direction favorable to his own interests. This is called manipulating the market. The commonest form of manipulation is to attempt to gain monopoly control of some commodity and extort monopoly prices. To obtain such a "corner" is very difficult, particularly in a world market like that of wheat, for instance, where a new supply continually appears from various parts of the world according to the different harvesting periods.

Many business men prefer to undertake the risks of speculation and make their profits in that way. The engineer would prefer a constant price, making his profit from the efficiency of his plant. However, compared with the gains and losses following from these price changes, the gains from efficiency are very small. The success or failure of many enterprises depends upon the estimate of fluctuations in prices. But it is also oftentimes possible to minimize the risk of value loss by giving up the chance of value gain.

Many business houses produce only at prices already agreed upon. This does not in any way eliminate the risk; it only shifts it from one person to another. The purchaser must agree to pay a certain price and then wait for the goods. It is he who assumes the risk of a change in price rather than the seller. A similar method, resorted to often in construction, is to produce at cost plus a certain percentage.

Contracts

Although accepted orders are legally contracts and therefore binding, in some branches of business this fact is not always recognized. In times of falling prices, cancellations of contract are not unusual. Since the manufacturer has no means of anticipating such cancellations they may cause him to be caught with a large stock of goods on his hands, but because the amounts involved are generally small, legal action is seldom taken. The practice therefore continues and considerably increases the risks which business men must bear.

Insurance

Another way to meet value risk is by insurance. Insurance is based upon the principle that although we cannot predict when any particular mill will burn down, we can tell almost exactly how many out of a given number will burn down in any year. The principle of insurance cannot be applied to all risks but only to those contingencies which have a certain regularity when considered in large numbers. By calculating this proportion and then dividing the loss among all those which face such a contingency, enough can be gathered in small sums from each to indemnify in full those on whom the loss falls. So, by making a small payment each year, every business house can protect itself against value loss. Insurance can best be applied where there is a definite and regular probability of misfortune among a known part of a large number of potential victims. It is practical to insure against loss from burglary, explosions, accidents, wind, hail, rain, earthquakes, disease, forgery, fraud, shipwreck, etc.

Life insurance operates on the same principle of exact probability in large numbers. An insurance company agrees to make a certain payment upon death. It is therefore sure that that payment will some day have to be made. The only question is, How soon? But here also the fact that the company deals with a large number of persons enables it to determine the probability almost exactly. For any one young man, aged twenty, the insurance company has no inside information as to when he will die. For one hundred such young men it can feel sure that the average length of life will be between forty and forty-five more years;

for ten thousand men, it can predict virtually exactly. So the company will conduct its business as if it expected every young man to die at the average age as determined by elaborate records kept of mortality in the past. It will exact from him such payments as will create a fund out of which his insurance can be paid at the time calculated. Some of its subscribers will die before the expected time, some after; but the average is known. In the building up of these funds, vast sums of money are accumulated by insurance companies. These constitute an appreciable part of the source of investment for bonds, mortgages and the like.

Industries dealing directly in finance, like banks and insurance companies, require special supervision to assure the prevention of fraud and dishonesty. Insurance companies are not free to operate as they will but are subject to government regulation. Most states have special commissioners who supervise the insurance companies operating within the state. There are careful limitations on the kind of investments which may be made and numerous stipulations concerning organization, reports and statements.

A scheme closely allied to insurance is the pooling of profits. This scheme conflicts, however, with generally accepted theories of the desirability of competition and the maintenance of individual enterprise. The pooling of profits has been suggested as a method of dealing with the railroads.

Hedging

Another method of shifting risks is found mostly in markets of agricultural products and in the import and export trade. In hedging, a business man arranges for the sale of commodities at a future date to offset the fluctuations in price in connection with a transaction just made. It is therefore playing the market both ways. John Smith buys a certain amount of a commodity. He also promises to deliver the same amount at a certain price at a certain date in the future, this promise being known as a "future." When the time has passed, if there has been any change in price, whatever profit has arisen out of one transaction will be offset by a loss in the other, thus eliminating the factor of value risk. For example, a flour manufacturer buys 10,000 bushels of wheat. If it will take him two months to convert it into flour he also sells a future, promising to deliver 10,000 bushels of wheat in two months. The price of this future can never be much above the present price of wheat plus storage charges, or any one could make money by going into the storage business. The flour manufacturer proceeds to manufacture the wheat. At the end of the two months, his flour is made. But the price has changed in the meantime, and he may have lost money. He then re-enters the market, buys 10,000 more bushels of wheat at the market price and turns it over to the possessor of his future at the price agreed on two months before. What he makes on one transaction he loses on the other. He is therefore free to make his profit as a manufacturer without being compelled to be a speculator as well.

Business Forecastin

Finally, one method of reducing risk is to obtain more accurate insight into the future and reduce the element of guessing. Within recent years there has been a very rapid development of agencies which attempt to aid business men in estimating future movements of business. Forecasting usually has a statistical basis. In general the method is to study the past, find certain regular relationships of cause and effect, and watch for the same conditions to appear again. If it had never been known to happen that the country suffered a business depression when the banks had plenty of funds available and were offering it at low rates of interest, then such a forecasting agency would refuse to prophesy a depression as long as the money market was easy.

It must be borne in mind that forecasting is self-destructive. If some agency forecasts so correctly that it gains the following of business men, its forecasting would probably cease to be so accurate. It would predict a rise in the price of sugar, to reach a peak in two months. At once all business men would buy sugar, the price would soar at once and two months probably would find the price falling once more. The forecast brings an element into the situation which was not present when the forecast was made. Forecasting therefore can never completely solve the problem of value risk.

The varied aspects of risk are presented in Charles O. Hardy's *Readings in Risk and Risk-bearing*. For those who delight in niceties of abstract reasoning, Frank Knight's *Risk, Uncertainty and Profit* might prove entertaining. Certainly, many of the chapters in *The Problem of Business Forecasting*, a collection of papers presented at an annual meeting of the American Statistical Association, edited by Warren M. Persons, are worth reading. The Harvard Economic Service, Brookmire, Babson, and Standard Statistics Company are among the more interesting forecasting agencies.

CHAPTER XXI

BUSINESS CYCLES

BUSINESS conditions are always changing. Each period of prosperity gives way, sooner or later, to a period of depression and each period of depression, in turn, to a period of prosperity. These movements, which are very much like irregular waves, are known as "business cycles." The turning point from prosperity to depression, if mild, is called a recession, and, if violent, a crisis. When prosperity ends with great financial strain and excitement there is what is called a panic.

What They Are

In recent years in the United States turning points were marked in 1893, 1896, 1900, 1903, 1907, 1910, 1913, 1918, 1920 and 1923. Evidences of the business cycle can be seen in practically all countries in which there has been any marked development of industrialism. England has fluctuations in business very similar to ours, and even such countries as Argentina, Japan, Australia, and

Sweden pass from prosperity to depression and return with some degree of uniformity.

The Similarity of Cycles

Business cycles are by no means similar in length or severity. Reference to the dates of crises in the United States since 1890 shows the periods between recessions to have been—in years—3, 4, 3, 4, 3, 3, 5, 2 and 3. Cycles in the United States are shorter than those of other countries, averaging approximately four years between recessions. The severity of business cycles is likewise irregular. In the years 1873, 1893, 1907, there were very severe panics, whereas 1884, 1903, 1910, 1913, were much gentler turning points. Depressions are sometimes severe and long, as 1874-1878; severe and short, as 1908; or mild and short, as 1904 and 1911. Prosperity may be excited and very high, as in 1906 or 1919, or calm and quiet, as in 1902 or 1912.

No two business cycles can ever be quite alike. Business conditions are determined by a multitude of factors and these are never the same. The international situation, wars, changes in monetary and banking systems, tariffs, domestic politics, catastrophes, weather and other crop conditions all affect the tone of business and cause business cycles to vary in kind and in degree. None of these elements may be said to cause the cycle; rather, they are external forces which modify and condition its form.

While no two business cycles are exactly alike, all seem to have certain common characteristics. There may be many variations produced by some of the external forces just mentioned, but nevertheless different cycles seem to follow a fairly definite pattern. So, disregarding peculiarities which may arise from external and unusual forces, let us see how a "typical" cycle develops.

The Revival

Let us start at a time when business has been in a state of depression for some time. There is little activity. Trade is dull; many mills are shut down; there is much unemployment. Prices are falling gradually, being very low as compared to prices during prosperous times. Wages are low and the labor supply is plentiful. The banks have large reserves and interest rates have fallen. Business men are very cautious and even pessimistic.

Sooner or later, however, there is an increase in the buying of goods. People had put off buying until prices seemed to be at the bottom, and at last they seem to be as low as they are likely to get. In many cases, also, the supplies left in the shops and factories after the recession have given out and new goods must be bought. At first these demands are met with stocks on hand, but such stocks gradually are exhausted. Bit by bit manufacturing revives under the stimulus of an awakening demand.

Once the revival begins, it grows and spreads rapidly. The resumption of manufacturing causes more men to be employed. Increased employment means that business men, workers and their families have more money to spend. Their increased purchases will create further demand for goods, which will give further stimulus to manufacturing. It seems to be an endless chain. Business men become more cheerful. The movement may be accelerated by a fortunate influence such as a bountiful harvest or retarded by an unfortunate influence such as a fear of war; but the gradual enlivening of industry continues.

Presently the price level, which has been low during the depression, begins to rise. In general, this comes when producers have all the business they desire and can begin to choose. The rise in price spreads throughout industry, one increase causing others. The price movement is by no means regular, certain industries having marked fluctuations while others are much less affected by cyclical movements.

The increase in production and rise in prices swell profits generally. While many costs remain relatively fixed, such as salaries, insurance, bond payments, etc., and wages and short-time interest go up somewhat, the price of the product is advancing rapidly. A wide gap appears between costs and return. And larger profits stimulate expansion and optimism.

Thus the ball rolls faster and faster. Rising prices encourage more and more and speedier activity. Many persons buy goods not for their own consumption but hoping to sell at higher prices. Their demand drives prices up still further and serves as a still sharper incentive to higher production. Each increase in activity means more money paid out, more money available for spending and more trade.

The Coming of Stress

But strains begin to manifest themselves. The costs of doing business gradually go up. Wages have gone up no faster than prices, but labor cost has risen per unit of production. Overtime work is costly and less efficient. Many less skilled workers have had to be employed. Also, the number of jobs exceeds the number of workers, so workers can defy their employers without fear of starvation. Accidents are more frequent.

Other costs have gone up as well. Contracts fixing certain costs at a low figure expire and new ones are entered into at a higher figure. Interest rates are rising. So do prices of raw materials, and, as a rule, at a more rapid rate than the price of the finished product. Finally, "speeded" production begins to prove wasteful.

Another strain is found in the money market. Credit expansion cannot continue indefinitely. There is a limit to the loans which banks may safely make. But the expansion of business increases the demand for bank loans. The higher price level requires a more plentiful medium of exchange and business men find themselves more and more compelled to obtain assistance from the banks. The interest rate rises as the period of activity continues, and it becomes harder and harder to obtain credit.

As the climax of prosperity approaches, orders for new equipment fall off. It is only when business is expanding rapidly that equipment is ordered in large quantities. As the rate of expansion begins to slacken, orders for new machinery actually diminish. Even while business is still expanding, the manufacturing of equipment may already be slowing down. And the decline of one industry has an unfavorable influence on the prosperity of others.

The Crisis

It becomes more and more difficult to raise prices. Profits are threatened. It is this decline in profits which causes the turn. Confidence tapers off to caution, and caution to fear. Creditors begin to demand payments. And prosperity has come to a crisis. It was the prospective increase in profits which brought on accelerated activity, and it is the fear of loss which retards it.

The alarm spreads. Each firm endeavors to make its condition sound. Every business man tries to collect what is due him and stave off his own creditors. The demand on the banks becomes severe. The fear of failure is everywhere. If some large firm should fail, others whom it owes will be dragged down with it. If not, the liquidation may be gradual.

The Recession

Goods have accumulated during the boom. They now flood the market, as business men try to sell them to pay their bills. Prices fall, production declines. With falling prices, buyers delay buying, thereby decreasing the demand. This, in turn, causes factories to work on part time and then to shut down, throwing workers out of employment, cutting into their purchasing power and still further cutting into the demand for goods. The endless chain is moving again.

The depression gradually spreads throughout industry. The loss of profits makes business men pessimistic. Falling prices cause delay and the general tendency is toward dullness and inactivity. The various strains which have developed disappear. Costs of production also decline, the money stringency is eased and industry is back in the state in which we found it when we began our story.

The Cost of Business Cycles

The losses suffered by the community from the business cycle are impossible to estimate. A careful study of the loss in production in mining, manufacturing and transportation has been made by Drs. Mitchell and King of the National Bureau of Economic Research. They found that from 1890 to 1919 production was 8.5 per cent lower on the average than in the years of greatest prosperity—1891, 1906, 1916. In one year production was nearly 21 per cent less than in those three years, in five years it was 15 per cent less and in twelve years 10 per cent less. Comparing production as a whole with the output of active but unhurried years, like 1897, 1909, 1912, the average deficiency was 2.8 per cent, but in five years the deficiency exceeded 10 per cent. Their estimate of loss in total national income owing to business cycles from 1909 to 1918, which includes only one year of real depression, is 2.4 per cent, though in 1914, the year of depression, it was 9.4 per cent.[1]

These figures, it must be remembered, deal only with physical output,—they do not cover human loss. It is impossible to estimate the social effects of the cycle—the privations, anxiety, misery, loss of skill, physical deterioration and broken spirits which the unemployed suffer.

Remedies

Although we are fairly familiar with the symptoms of the business cycle ill, we have had very few effective remedies suggested. Some of them and the arguments in support of them follow:

The Stabilization of Production. This means the organization of business so that there will be a steady production rate for each firm year after year. It involves production for stock, a long-time production policy, and a refusal to be stampeded by the excitement of prosperity. This is really a refusal to participate in a cycle.

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1. National Bureau of Economic Research, Business Cycles and Unemployment. New York, 1923.

Long-Time Planning of Public Works. There are many public buildings and roads which must be built. If construction can be retarded in periods of prosperity and undertaken in periods of depression, it will give employment to many, which will increase their buying power and relieve the depression.

Unemployment Insurance. By collecting funds from the industry during brisk activity and dispensing them to workers during unemployment, there will be no sudden falling off in the workers' buying power. Since the cost will be a burden on the employer it may also induce him to strive more vigorously for the regularity of production.

Bank Control. Raising the interest rate earlier in the period of expansion or making stricter the requirements for credit will serve to increase cost of production, cut into profits and deter business men. It will also prevent over-expansion.

Monetary Readjustment. By constantly adjusting the standard of money the fluctuations in the price level may be prevented and the most decisive element in stimulation of activity—rise in prices—thus restrained.

Business Statistics. Improvement of the information which business men have, giving them warning when stocks of commodities are becoming dangerously large, will aid in preventing over-expansion. Within the last few years various trade agencies — trade associations, trade journals, departments of the government, and various trade organizations—have furnished the business man with a body of descriptive and statistical data concerning the state of business.

The best summary of our knowledge of business cycles to date appears in *Business Cycles and Unemployment*, a report prepared by the National Bureau of Economic Research for President Harding's Unemployment Conference. A history of cycles and a study of lengths and of international aspects is *Business Annals*, by Willard L. Thorp. For a provocative presentation of one important aspect of the problem, see Foster and Catchings' *Profits*.

PART SIX

CONCLUSION

CHAPTER XXII

CONCLUSION

WE HAVE been occupied thus far in analyzing the institutions that constitute our economic system. We have tried to see them as they are, not as they might be or could be; we have tried to look at them factually rather than critically. Such is the major purpose of this book. But it would be inadequate if it did not also take cognizance of the fact that our economic institutions are alterable and that our economic system is not ultimate; if it did not at least make record of the fact that the very bases of the economic systetm have been subjected to criticism and that some of the criticism may be valid—although it is not our aim or desire to pronounce judgment.

Waste

In answer to those who are inclined to be satisfied with things as they are, it is necessary only to cite a report made by a group of engineers in 1921. A Committee of the Federated American Engineering Societies made a careful examination of conditions in six of the leading industries in the

United States. Done by engineers, the study was presumably made in the same matter-of-fact way in which they would test the strength of a steel girder. Assuming a plant combining the best features of the most efficient plants in the industry to have zero waste and the plant which accomplished nothing at all as having 100 waste, the committee gave the following table as a statistical picture of the extent of waste in six industries.

Industry	*Management*	*Labor*	*External Factors*	*Total*
Men's Clothing...	48.33	10.50	4.95	63.78
Printing	36.36	16.25	5.00	57.61
Building	34.30	11.30	7.40	53.00
Textiles	24.70	4.70	19.80	49.20
Boots and Shoes..	30.25	4.85	5.83	40.93
Metal Trades	23.23	2.55	2.88	28.66

Source: Federated American Engineering Societies, Committee on the Elimination of Waste in Industry, *Waste in Industry.* New York, 1921.

The amount of waste here uncovered is astounding. Engineers are men accustomed to measure carefully and examine dispassionately. And they found the industries they looked into operating on the average at about one-half the efficiency which might be realized. It is significant that the discrepancy between average management performance and the best is so much greater than between average labor and its best.

The report goes on to summarize the types of waste found. It groups them in four classes.

1. Low production caused by faulty management of materials, plant, equipment and men.
2. Interrupted production on account of idle men, idle materials, idle plants, idle equipment.
3. Restricted production, restriction being deliberate on the part of either owners, management or labor.
4. Lost production on account of ill health, physical defects and industrial accidents.

Minor Changes

One difficulty in appraising the present system is that it is continually changing. If, for instance, this book had been written in 1912, it might have severely criticized the banking system. But since then, the Federal Reserve System has been introduced and most of that criticism no longer holds. Changes in the economic order may be gradual and follow the nature of evolution, as they usually are in the United States, or rapid and partake of revolution, as recently in Russia and Germany. The overthrow of the institutions of private property and business enterprise in Russia and the at least temporary destruction of the institution of money in Germany were economic cataclysms. The old economic institutions were wrecked or badly damaged, and a new economic order must gradually be built and assimilated into the customs of the people.

The changes which have taken place in the United States in recent years have not been fundamental, being either attempts to improve the functioning of some part of the machinery, as the banking system, or devices to meet unusual and new situations, as the fixing of prices during the world war or the development of compulsory workmen's compensation. It is apparent that some parts of the economic order function more efficiently than others. There are students who hold that these weak spots—the recurrence of business depressions, the wasteful exploitation of natural resources, the inequality of wealth and the like,—are necessary evils or even desirable. There are many other equally careful students who believe that the present evils can be remedied gradually by careful minor adjustments. And finally, there are still others who hold that the underlying institutions are basically unsound and that the whole or large parts of the economic order must be destroyed and another erected on entirely new foundations. It is impossible within the scope of this book to examine these points of view exhaustively. But they must at least be touched on.

Criticism of Machine Technique

The criticism of machine technique rests on two grounds: its effect on the worker and its effect on society as a whole. As for the worker, machine technique has completely changed his job. Where carried to the extreme, as in the factories of Henry Ford, work becomes a mechanical repetition. Furthermore, modern production has brought with it industrial diseases and frequent accidents. The social effects are emphasized by critics even more. The machine does not serve man; it dominates him, and the rule is harsh. We live by machines, if not like them. We cross streets according to the flashing of red or green lights, time our every movement by the clock and are taken to and from work on machines, which are themselves so uncomfortable as to be exhausting. To satisfy the machine we squander our natural resources at an appalling rate. Nor have our higher faculties been free from strain. We are told that we are losing our sense of beauty, of individuality; the machine makes for monotony, not only in things but in persons, ideas and values. Our ideals are expressed in terms of products rather than character. Thus the indictment is constructed: we cannot stand the pace, we are weakening in physical and moral fibre, we are losing the real values of life and the sense of values.

It is conceded that the machine has had its beneficent results: it relieves famine in India and China, sends ships speedily to succor the wrecked at sea. Illegible handwriting is now replaced by typewriting. And, above all, we must thank the machine for the great increase in our production, and for shorter working days.

But it must be asked: Have we not now made ourselves dependent on the machine? If by some miraculous translation all machinery were suddenly removed, could the majority of the population of the United States adjust itself—could it survive? Unless decisive and thorough-going measures are taken to apply birth-control to the machine, which is hardly likely, the machine technique will continue to advance as rapidly as it has in the last two or three generations. Our life will be mechanized to an even greater degree. The solution seems to be to put more joy into work by other means, and to make possible fuller utilization of the worker's leisure time, thus attempting, by a process known in psychology as compensation, to offset the lack of opportunity for self-expression no longer possible in work. Perhaps it is more true that our technical proficiency has advanced beyond our abilities to take full advantage of it, and we need not less technical proficiency but more ability to enjoy the freedom which it can give.

Criticism of the Price System

The criticisms of the institution of the price system are of three kinds. The first is directed against the nature of money. This kind of criticism was most vigorously pressed in 1896 in the campaign, led by William Jennings Bryan, to establish a double standard. In more recent times Professor Fisher has renewed the discussion. None of these critics wishes to do away with the institution of money, but all dwell on the fact that the value of money, and therefore the level of prices, is subject to considerable fluctuation, which brings about a meaningless and unjust redistribution of wealth.

A second school of criticism holds that the more important phase of the monetary system, namely credit, is controlled by a small group which directs credit for the advantage of its members and not the best interests of society or even business as a whole.[1] Undoubtedly bankers can direct the development of industry by controlling investment funds. They can also bring great pressure to bear on going concerns and their slightest opinion is listened to and acted upon, sometimes in sheer anxiety not to offend them, so great is their power.

Neither of these two groups of critics asks that the institution be completely done away with, but rather that it be controlled more satisfactorily. But the third group has a more fundamental criticism,—it attacks the price system itself, maintaining that the latter, unregulated as now, does not create values which accord with social welfare. They maintain that any system in which men can increase their return by limiting their output, is wrong. Furthermore, they hold that markets, such as the labor market, become merely battlefields, and ultimate prices, such as wages, are determined by bargaining skill and strength, rather than by justice or fair value. Forty years ago, these critics succeeded in modifying the price system where it related to railway rates, but since that time, the attack has centered chiefly on the unfairness of monopoly prices. Except for a brief period during the war, when the failure of our price system to function properly was clearly recognized, and government intervention was introduced, the critics of the price system have directed their efforts more directly at the institution of business enterprise. These two institutions are so closely related that restriction of business enterprise may perhaps be most easily accomplished through price regulation.

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[1] Louis D. Brandeis, Other People's Money and How the Bankers Use It. 1914. Also the Report of the Pujo Committee, Report of Committee Appointed to Investigate the Concentration of Control and Credit. 62nd Congress, 3rd Session, No. 1593.

Criticisms of Private Property

No institution has been the butt of as much attack as private property. Certain groups, notably the socialists, have directed their fire against it for many years. In this country its most widely recognized opponent was Henry George. One reason for his popular support was that he had a specific remedy to offer—that the income from private property, particularly land, should be taken by the government in the form of taxes. Various communities have been organized in which the attempt has been made to do away with private property, but they have been uniformly unsuccessful.

Much of the criticism of private property is based on the inequality of the distribution of wealth. This issue has been factually discussed in Part Three. According to the Census of Wealth for 1922, a redistribution of wealth on a per capita basis would give every man, woman, and child property valued at $2,936, of which more than half would be in land and buildings. Many objections can be raised against such a redistribution, of course. The inequality of distribution could be only temporarily remedied by one outright redivision, unless thenceforth disproportionate rewards for economic service were prevented—that is, private ownership rights limited.

Many critics center their attack on the rights created by the institution of private property—the right to use and control objects, the right to dispose of property, particularly in the matter of inheritances, and the exclusive right to the products and fruits of property. Although all forms of ownership income are under fire, those which are most difficult to defend are returns from natural resources, and unearned increment resulting from social development,—e. g., urban land values. Unquestionably, the power and prestige which ownership affords is tremendous, and often undeserved.

At this point it is necessary to call attention to a tendency which is evident, modifying the institution of private property. In the last fifty years there has been some increase in interference by the government with the rights of property owners. The extension of public utility supervision is one evidence. The inheritance taxes and graduated income tax are another—they really constitute a considerable redistribution of property from which the poor man benefits. Legislation concerning sanitation, safety devices, conditions of labor, all restrict the privileges of property holders. But in spite of these isolated instances there has been as yet but little impairment of the fundamental principles of the institution of private property.

Criticisms of Business Enterprise

The criticisms of the institution of business enterprise narrow down to two points. How satisfactorily does the profit-making motive operate? Can any other motive be substituted which will carry our system as far and to better ends? It is difficult to disentangle the motives for any action. Not long ago the United States Steel Corporation reduced the working day in some of its mills from twelve hours to eight. How far were its motives selfish and how far were they prompted by desire for social betterment? However, there can be little doubt that in the present system the principal economic motive is the making of money, and that money is often made where no social service has been performed.

Constructive Proposals

Not all criticism of the economic system is negative. Concrete alternatives have been offered. The two best known general types are socialism and communism. The advocates of both are divided among themselves, and schisms have developed over methods of procedure to attain the end they all desire, and sometimes also over the ends to be attained.

Socialism

Socialism, as defined by Dr. Harry Laidler, is a movement striving for "the abolition of the present capitalistic system and the substitution therefor of a system of collective ownership and democratic management of the socially necessary means of production and distribution." The hope is that goods will be produced for use and not for profit and that public direction of production will bring to an end the exploitation of natural and human resources. It must be clearly understood that most socialists do not advocate an equal distribution of wealth but rather a change in the method of directing production and distributing incomes.

There are many ways by which the individuals who accept the general aim of socialism propose to realize the common end. *Syndicalists* propose to give to the workers in each industry the ownership and control of that industry. They would abolish the political state entirely. Their refusal to recognize the political state is reflected in their belief in "direct action," that is, the attempt to accomplish their ends through industrial warfare and sabotage, rather than by indirect or political action.

Guild socialists advocate placing the control of the shop in the hands of the workers but reserve the control over prices and output to the state. Ownership also would be vested in the state. This movement has made much of the thesis that the machine is making the worker into a lifeless machine, and that the worker must be given an opportunity to express himself.

There are many socialists also who advocate *joint boards of control* in each industry, consisting of representatives of workers and the community at large. This type of nationalization of industry, with government ownership, and operation by representatives of the parties interested, has received much public discussion in the United States, especially in connection with the railroads. Finally, the *state socialists,* as the name implies, propose an economic system in which the government owns and controls industry and is itself dominated by a small group of individuals.

Communism

The *Communists* make up the other most important school of criticism of the present order. They go one step further than the socialists. Whereas the socialists advocate collective ownership and democratic management, the communists propose the socialization not only of production but also of distribution. Not only shall the community own and control production, but it shall also direct the distribution of goods among its citizens. Whether the goods shall be distributed equally or according to some plan of "just deserts" is an issue on which communists themselves disagree.

These concrete proposals are fertile ground for discussion. They have been given trial in various places and at various times, with seldom more than dubious success. However, such failures are by no means conclusive evidence of the futility of the schemes. An economic order requires time to ground its institutions in the habits and thoughts of a people and to adjust itself to the many minor but important difficulties which must be met. These experiments have all been made under such unfavorable circumstances and have usually been so short-lived, that they offer little basis for judgment as to their real worth.

If we cannot judge on the basis of experience, it is necessary to consider the schemes themselves directly. Here we meet a dilemma. Whether we believe that a communist or socialist state may exist and function satisfactorily depends upon our concept of human nature. Our present order furnishes an incentive to economic action, namely, profits. It is that incentive which both the socialists and communists desire to eliminate. Whether other incentives can ever replace business enterprise is the question that must first be answered.

What is most essential is to realize that no economic system is static and unalterable, that our own institutions are not necessarily adequate because they are institutions, and that it is possible that they could be supplanted to the greater good of most of us. But before we can decide whether they can and should be supplanted and by what other institutions, it is necessary to understand and evaluate them, always realizing that changes may be for the worse as well as for the better.

For a valiant endeavor to reckon the enormous wastes of our present system, see Stuart Chase's *The Tragedy of Waste.* The aspects of machine technique are presented in a very small brochure, *Ouroboros,* by Garet Garrett. See also Thorstein Veblen's *The Instinct of Workmanship,* and Samuel Butler's delightful *Erewhon.* A classic which attacks the system of distribution is Henry George's *Progress and Poverty.* And the most logical attack on business enterprise as the director of our order, is R. H. Tawney's *The Acquisitive Society.* For discussions of ways out, see Harry Laidler's *Socialism in Thought and Action,* and Bertrand Russell's *Proposed Roads to Freedom.*

THE END.

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